

# The Mining Journal

Established 1835

Railway & Commercial Gazette

Vol. CCXXXVII No. 6057

LONDON, SEPTEMBER 21, 1951

PRICE 8d

At your service for—  
**MINING MACHINERY**  
 AIR COMPRESSORS • BOILERS  
 CRANES • LOCOS • PUMPS  
 All the Plant needs of Industry.  
 Send us your enquiries.  
**SIMM**  
 MACHINERY CO.  
 East Parade,  
 Sheffield, 1.  
 Tel. No. 25032

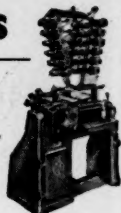
BOILERS PUMPS  
 LOCO CRANES  
 COMPRESSORS DUMPERS EXCAVATORS

**"HUNSLET" LOCOMOTIVES**  
**STEAM & DIESEL**  
**SPECIAL DIESELS**  
 FOR  
**UNDERGROUND WORKING**  
 THE HUNSLET ENGINE CO. LTD.  
 LEEDS 10

**CONCENTRATION of MINERALS**  
*by Modern Methods*  
 TUNGSTEN • TIN • CHROMIUM  
 NIOBIUM • TITANIUM  
 BASE METALS • RARE EARTHS  
 ETC. ETC.  
 CONCENTRATING TABLES  
 MAGNETIC SEPARATORS  
 SCREENING PLANTS  
 HIGHEST EFFICIENCY—  
 LOWEST COSTS  
**DAVIES MAGNET WORKS LTD.**  
 WYKE HERTFORDSHIRE Telephone: WARE 48  
 M.J.78

**DOUGLAS**

**& MACADIE**



We will be pleased to  
 furnish illustrations  
 and specifications of  
 suitable machines on  
 receipt of details of  
 your coil-winding  
 requirements.

## Automatic COIL WINDING MACHINES

There is a complete range of these Coil Winding Machines to cover every requirement, and several are eminently suitable for the rewinding or winding

of replacement coils in the field. Easy operation and speedy results are obtainable by comparatively unskilled labour.

Sole Proprietors and Manufacturers:

**The AUTOMATIC COIL WINDER & ELECTRICAL EQUIPMENT CO. LTD.**  
 WINDER HOUSE • DOUGLAS STREET • LONDON • S.W.1 Telephone: VICTORIA 3404/9

**8 inch lumps or dust**



**BIRTLEY**



No matter how large or complex the Coal preparation problem, the Birtley Co. Ltd., are prepared and equipped to handle it.

Makers and suppliers of Coal preparation plants since the idea was first conceived. Plant for cleaning coal from 8" lumps down to dust. The small photograph shows a Central washery treating 18,000 tons per week.

## COAL PREPARATION PROCESSES SUPPLIED

TROMP DENSE MEDIUM WASHING PLANT • K AND B FROTH FLOTATION PLANT • BIRTLEY PNEUMATIC CLEANING PLANT • AUTO RHEOLAVEUR PROCESS • BIRTLEY DEDUSTING AND DUST COLLECTION PLANT...

THE BIRTLEY CO. LTD., COAL PREPARATION DEPARTMENT, MARKET PLACE CHAMBERS, WEST BARS, CHESTERFIELD Telephone: Chesterfield 4116 (3 lines)

P1033



have you  
seen this  
**VICTOR**  
**DRILL** in  
*action?*

Wherever you need a 50 cycle Drill,  
this **VICTOR** model gives more  
power and cuts operator fatigue

DESIGNED, like all Victor Mining Equipment, to give a high power/weight ratio, this 50 cycle drill is extremely light in weight and is fitted with a powerful motor, which has variable speeds for coal or stone work. For stone work the drill is fitted with lugs for use with force feed mechanism.

Both mechanical and electrical systems are easy to maintain, and all spare parts are interchangeable.

**A DEMONSTRATION CAN BE ARRANGED** at some time to suit you, when you will have the opportunity to see the Victor 50 Cycle Mining Drill working under normal conditions. A line from you and we shall be happy to fix things up. Why not write us today?

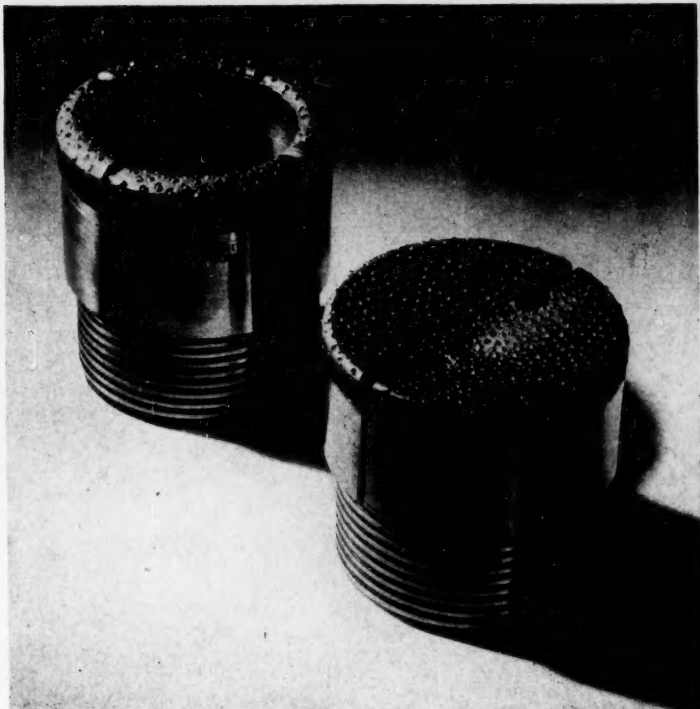


**MINING**  
**V**ictor  
**PRODUCTS**

*Used throughout the World*



The Smit resetting facilities are a particular feature of our Service. We rebuild part-worn bits as new, in a quick turn round of a few days only and at a most economical cost. If full use is made of this Service, bit cost per foot will be maintained at a minimum outlay.



## Smit diamond bits put *PROFIT* into drilling

Why do people come back to Smit's over and over again for their bits? It is because they get the right tool for the job they are doing. The right tool means better, faster drilling and that means profit for the man who pays good money

for the bit. When Smit's advise the use of a particular bit, it is because they know from long, practical experience of drilling problems that it will be the most economical for the purpose for which it is required.

**J. K. SMIT & SONS, (DIAMOND TOOLS) LTD.**

Dept. D2, Head Office: 22-24 Ely Place, Holborn Circus, London, E.C.1

Telephone: ★ HOLborn 6451

And at Coventry: Holyhead Chambers, Holyhead Road. (COventry 5215) Manchester: 2 St. John Street (BLAckfriars 0043)  
Works: Colwyn Bay (Colwyn Bay 2062)

# The **D.P.** Rotary Pneumatic

## DRILLING MACHINE



TYPE D.P. 21

Other D.P. equipment includes:

Automatic Valves  
Ventilating Fans  
Pneumatic Picks

ONE of the most remarkable machines introduced to the mining industry. It is used for boring shot-holes in coal and soft stone, and works on the rotary principle. Using compressed air, it is absolutely safe in operation, while its light weight and ease of handling, together with entire absence of recoil and vibration have made it deservedly popular with the men, it being preferred to the percussive type of drill. It is used in conjunction with special drilling bits which enable it to drill in practically any coal. A trial is recommended.

DP/11



**dollery and palmer**  
LIMITED

38 Victoria Street, London, S.W.1

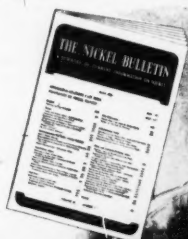
Telephone: ABBey 7166 (2 lines)

Telegrams: Deflection, Sowest, London

12/04/10

## Do you want a second opinion?

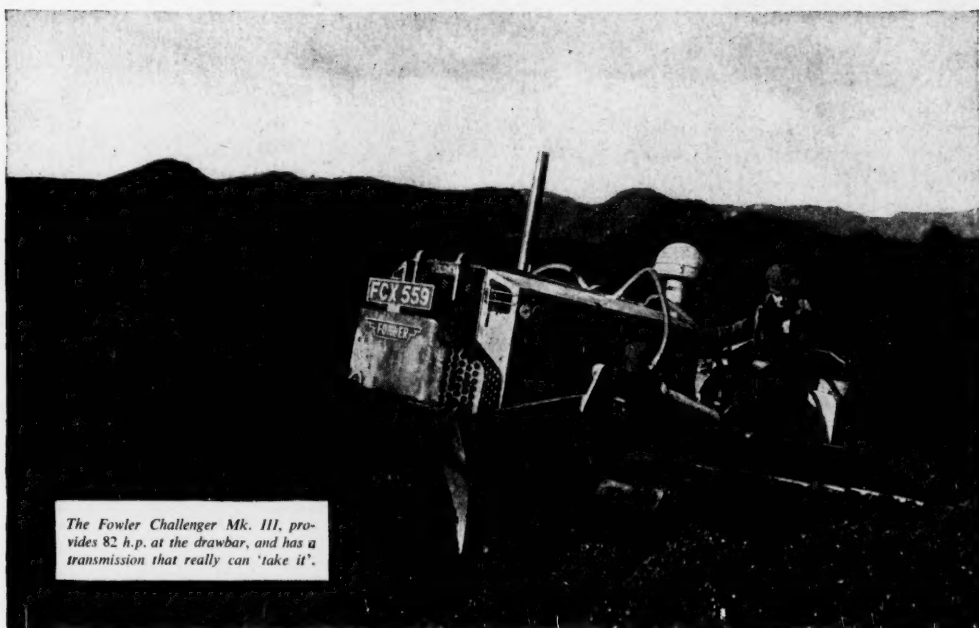
The first issue of The Nickel Bulletin was sent out 21 years ago. Ever since, month after month, it has found its way to the desks of metallurgists, chemists, engineers, works managers and many others concerned with the production or use of metal. Its abstracts of current published information provide a valuable second opinion whenever nickel and its alloys are being considered. You can have the Nickel Bulletin constantly at your elbow by asking to be put on the mailing list now. There is no charge.



THE MOND NICKEL COMPANY LIMITED • SUNDERLAND HOUSE • CURZON STREET • LONDON • W1



# CRAWLERS IN COLLIERIES CUT SLAG STACKING COSTS



*The Fowler Challenger Mk. III, provides 82 h.p. at the drawbar, and has a transmission that really can 'take it'.*

**W**HEN TOUGH, reliable Fowler Challengers get to work on a slag heap, stacking costs fall. Subject to none of the limitations that curtail the operating radii of alternative systems they handle a greater volume of slag in a given time.

### Space fully used

CHALLENGERS are not confined to any given area: they are thus able to use any available space, regardless of its shape, to the best advantage. They work actually on the *sides* of slag heaps which can therefore be constructed to any desired angle of slope. Highly manoeuvrable and easy to control, the Challenger operates with perfect efficiency in the restricted conditions that often obtain on the working surfaces of slag heaps.

### Service and Spares

FWLER CHALLENGERS are entirely designed and built in Britain. A comprehensive service organisation stocks spares and is staffed by factory-trained experts whose advice and assistance is available anywhere in Britain at short notice.



## CHALLENGER MARK III

BRITISH DIESEL CRAWLER

MANUFACTURED BY JOHN FOWLER & CO. (LEEDS) LTD.

*A Product of the Marshall Organisation*

Further particulars from THOS. W. WARD LTD., Albion Works, Sheffield, 4,  
or direct from the manufacturers: JOHN FOWLER & CO. (Leeds) Ltd., Leeds, 10.



## IT BEGAN WITH THE CRUSADES

We take some pride in our long history but the business in which we are engaged is older than we are. Eastern banking began in the 12th century when the Knights Templar, protecting the lines of communication which sustained the Crusades, devised a mechanism for exchanging currencies and transferring goods between Western Europe and the Asian Continent. This primitive but highly efficient banking service made possible a rapid expansion of the trade between the Eastern and Western worlds—a traffic which has been fittingly described as the foundation of all commerce. Nowadays travellers along the Asian trade routes and merchants and manufacturers engaged in the Eastern trade entrust their banking transactions to The Chartered Bank of India, Australia and China which maintains an extensive system of branches, under British management directed from London, throughout Southern and South-Eastern Asia and the Far East.

## THE CHARTERED BANK OF INDIA, AUSTRALIA AND CHINA

(Incorporated by Royal Charter, 1853)

Head Office: 38 Bishopsgate, London, E.C.2  
 West End (London) Branch: 28 Charles II Street, London, S.W.1  
 Manchester Branch: 52 Mosley Street, Manchester, 2  
 Liverpool Branch: 27 Derby House, Liverpool, 2  
 New York Agency: 65 Broadway, New York, 6

Branches of the Bank are established at most centres of commercial importance throughout Southern and South-Eastern Asia and the Far East.

*Merchants and Exporters*

**WOLVERHAMPTON**

**DIAMOND DISC & TOOL CO. LTD.**

ALL KINDS OF  
**BOARDS AND INDUSTRIAL DIAMONDS**

11 HATTON GARDEN  
 LONDON E.C.1

TELEPHONE: WOLBORN 3017 CABLES: PARDIMON LONDON

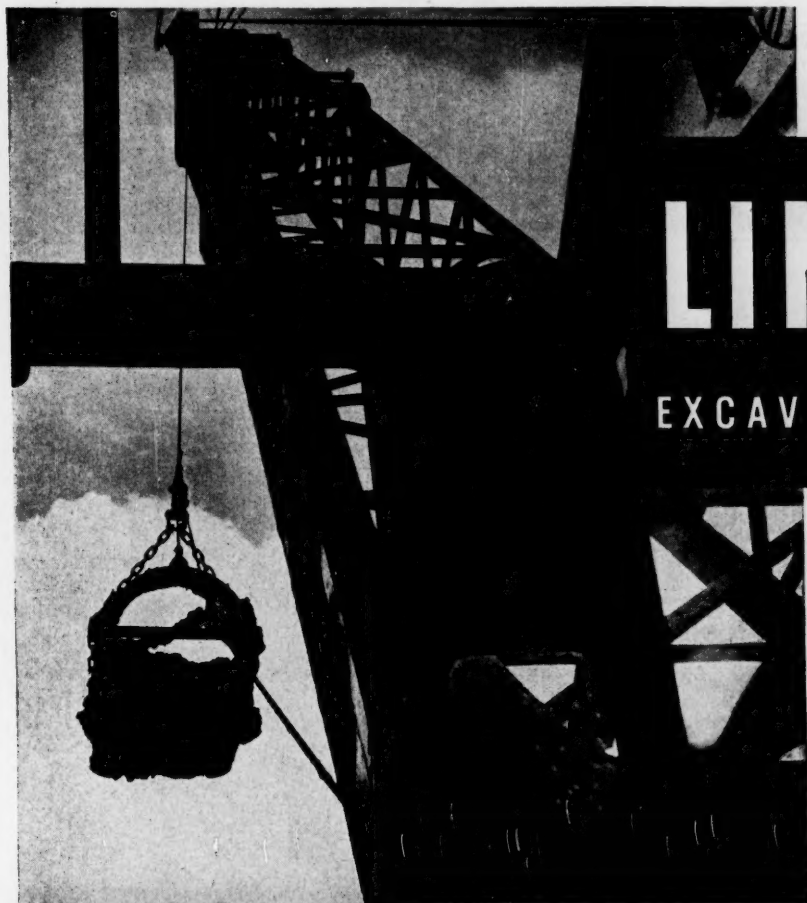
## The Mining Journal 1951 ANNUAL REVIEW NUMBER

Summarizes events and statistics  
 of 1950

*Is now on Sale*

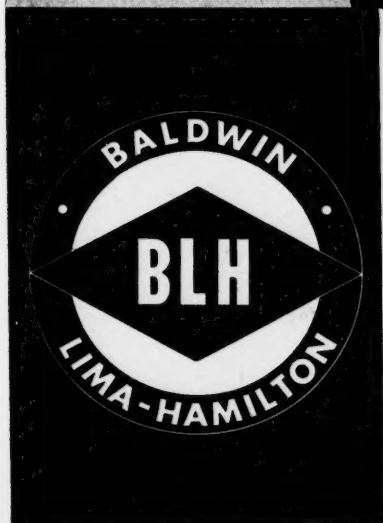
- Orders for copies should be placed direct, or through Newsagents.  
 5s. 0d. post free.

Write: The Publisher, Mining Journal,  
 15 George Street, London, E.C.4



# LIMA

## EXCAVATORS



On many of the largest and toughest excavating projects Limas have proved their capacity for hard and continuous service over long periods without breakdown. To meet Britain's need for heavy excavating equipment arrangements have now been made for the LIMA 1201 to be built in this country by the North British Locomotive Co. Ltd.

**JACK OLDING & CO LTD**

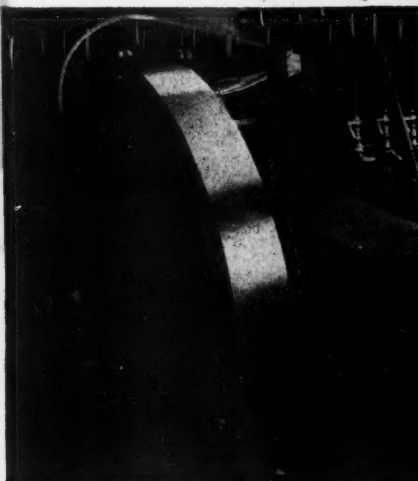
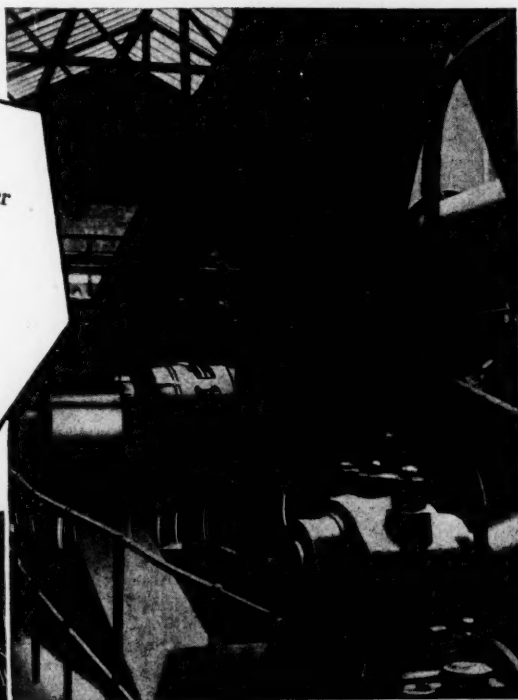
**HATFIELD · HERTFORDSHIRE**

TELEPHONE: HATFIELD 2333



## HIGH TEST TRANSMISSION BELTING

for every problem of speed, power  
and severe conditions . . . .  
specify B.T.R. High Test—the 'belt  
that needs no rest.' The FIRST friction  
surface belting and still unrivalled in  
material, construction and performance.



**BRITISH TYRE & RUBBER CO. LTD., HERGA HOUSE, VINCENT SQUARE, LONDON, S.W.1**

# The Mining Journal

Established 1835

Vol. CCXXXVII No. 6057

LONDON, SEPTEMBER 21, 1951

PRICE 8d

## EDITORIAL and ADVERTISING ENQUIRIES TO:

15 GEORGE STREET,  
MANSION HOUSE  
LONDON, E.C.4

Tel. Nos.: MANSION HOUSE 5511 & 9182

## SUBSCRIPTION RATES

(Including Postage)

INLAND:	10s.	...	3 months.
	18s.	...	6 "
	32s.	...	12 "
ABROAD:	40s.	...	12 "

## THIS WEEK'S FEATURES

PROSPECTING AND BOREHOLE DRILLING IN THE O.F.S.—II	Page 282
REPORTS OF H.M. INSPECTORS OF MINES - -	Page 286

## NOTES AND COMMENTS

### The Confusion in Tin

On Monday next the International Tin Study Group meets in Rome for one of its periodical discussions on the tin industry. Ever since the abortive meeting in Washington in March, the general position has become more and more confused and prices have declined, as is almost inevitable when major uncertainties prevail. For many years the free market centred in London secured a reliable world price, disturbed only occasionally by speculative movements to hoist prices, more particularly the Secretan Syndicate, which collapsed, and the Vienna Syndicate, which was saved by the threat of the approaching 1914 world-war. The next major interference with the free market was the Bandoeng Pool, formed towards the close of the world-war, and which was the inspiration of the International Restriction Scheme, with its accompanying buffer pools. This also was saved from final collapse by the approach of World-War II, when Restriction was tacitly abandoned. The fate of these periodical attempts to interfere with or modify the natural reaction of supply and demand on tin prices should be sufficient warning of the mischief latent in attempts to interfere with the natural economic relations, which a world free market can give.

However, all such experiences pale before the effects of the great stockpiling weapon now being welded by the United States, and operated, as far as can be judged, without any clear conception of the final objective. As the *American Metal Market* in a recent leading article puts it: If a lower level of prices is the main objective, producers must adjust production to demand since tin output apart from stockpiling is in excess of industrial demand. If on the other hand a surplus of available tin to be concentrated in a strategic stockpile is the main objective, a price must be offered which will assure the production of the desired surplus over industrial demand. In discussing the U.S. strategic stockpile, a "Review of the World Tin Industry 1950-51" just published by the International Tin Study Group, quotes the Senate Sub-Committee as stating last February that if agreements for substantial co-operation in other matters could be reached with the tin-producing governments, "the U.S. would give serious consideration to lifting the veil of secrecy with respect to their tin stockpile objective and present acquisitions." Till this is done, the industry must flounder amid increasing un-

certainities and mutual antagonism between producing and consuming interests. Under these circumstances our contemporary, the *American Metal Market* is calling for a new and realistic approach to the problem. It points out that U.S. Government intervention followed the exorbitant rise in price for which it was itself mainly responsible.

It has been stated in the Malayan Press that the delegates at the Washington Conference were assured that the "classic" report (as Mr. Stuart Symington described the Senate's Preparedness Sub-Committee's original report) was regarded officially in the United States as a thoroughly unreliable document, and would not be taken as the basis for future decisions regarding stockpile purchases. Yet apparently the R.F.C. and the G.S.A. have treated it as authoritative and acted accordingly. Until we know clearly what the American policy is, it is difficult to get down to discussing details.

The total American stock at the time of Pearl Harbour has been stated as 151,941 tons, and the Johnson Committee declared in March that the country's reserves were in excess of this figure. During the four years that America was engaged in the war, the stock held at the beginning is reported to have been reduced only to 83,525 tons. So on the above figures, the United States to-day should have, after allowing for the restrictions on consumption, at least a five years' supply.

What the delegates from producing countries at the meeting next week will have all be concerned to learn is whether the United States is satisfied with this stockpile, and therefore is not concerned to resume purchasing generally, or whether they are anxious to further augment their stockpile, and so take up the slack at present existing between production and purely industrial consumption.

Negotiations are said to be on the point of resumption between the U.S. Government and Bolivia for a long-term contract, but the Bolivian position is largely governed by the desire of the American authorities to maintain the Texas smelter in commission, and if eventually a higher price be fixed, then that at which R.F.C. are content to release tin to the American consumer, viz. 103c. per lb., this does not necessarily mean that the rest of the world is going to be offered better terms for their tin. The outcome of the Rome meeting, therefore, is awaited with great interest.



### Mining Boom in Northern Territory of Australia

One of the biggest mining booms in the Northern Territory of Australia is reported to be in full swing. New valuable fields are being discovered and old workings are being re-opened. Several new towns have sprung up on the main fields and the population is increasing. Government crushing batteries are working at high pressure to keep pace with the large amounts of ore streaming in from prospectors; so great is the volume arriving at Marranboy Battery, 300 miles south of Darwin, that miners have been told that only 200 ton lots can be mined at a time. In the Pine Creek area, 20 new mining leases have been granted in the last two months and another 10 are expected to be opened soon. Valuable finds of wolfram, copper and tin have been made in this district and high prices are attracting more prospectors.

According to a statement by Mr. Hasluck, Territories Minister, Northern Territory mining production in the year ended June 30 last was valued at the record figure of £886,139—an increase of £242,462 over the previous year and included: gold, £624,959; wolfram, £116,927; mica, £65,875; copper, £60,084 and tin, £15,694.

It is not unknown that the Northern Territories of Australia contain mineral deposits but, so far, their inaccessibility and other difficulties have militated against any systematic exploitation, but the recent developments referred to above may well herald a new gold rush.

Our Australian correspondent reports that there is also a boom in the search for tungsten in the territory and a number of old companies have been revived to acquire leases. Old mines are being re-opened and some new discoveries have been made. It is to be feared that market speculation enters very largely into the activity and that statements as to values and prospects will, in many cases, fail to be substantiated by results. The territory does contain important tungsten fields, but due care and discrimination in putting the merits of individual mines and prospects before the public does not seem to be generally practised.

### Native Metals Exhibited

A fine selection from the Geological Museum's collection of native metals—metals found in simple, natural state—at present on view in the main hall of the museum will undoubtedly attract a large number of visitors who will enjoy the quality of the specimens forming this special exhibit. It is well known that gold and platinum and some other precious metals are almost always found in native form, but under special geological conditions, some of the common metals are occasionally found in native form.

Thus visitors may inspect specimens of native gold from Uganda, Mexico, Brakpan, Transylvania, Russia, Colorado and Sinnamary, French Guiana. In addition, there are fine examples of gold found nearer home, e.g., in St. David's mine, and nuggets from Wicklow. Native silver is found usually as wiry or arborescent growth, but individual crystals are not uncommon. Large deposits, normally associated with other minerals, are thought to have been deposited by hot mineralized waters ascending from great depths. The Kongsberg, Norway, mines have yielded magnificent specimens, some of which are on view. There are also specimens of native copper, found as crystals, frequently flattened and distorted and in twisted and branching masses, from Cornwall, the Urals and Lake Superior; native platinum from Colombia and Siberia; and iridosmine (a natural alloy of iridium and osmium) from Siberia and Colombia. Also on view are drops of native mercury, found within the mineral cinnabar, and native lead from Sweden. In another case are shown examples of native semi-metals, e.g., antimony from Borneo and France; bismuth from N.S. Wales, Corn-

wall and Saxony; arsenic from the Hartz, Alsace and Bohemia, and tellurium from Colorado. Of special interest are examples of rare terrestrial native iron from Disko Island, Greenland, and in lava from Hawaii as well as specimens of meteoric iron from, e.g., Mexico, U.S.A., Chile and the Erzgebirge.

### Reynold's Tinless Can

Some particulars were published last week by Mr. J. L. Reynolds, vice-president of the Reynold Metals Co., of two processes for producing containers without the use of tin, which attracted some attention last week when publicized by Mr. Stuart Symington in his campaign to force down tin prices. These were:

(1) Aluminium-plastic cans, of which a few have been produced at the laboratory. In this process a roll of aluminium foil is coated with plastic in a high-speed continuous process. This coil is then heated to a specified temperature and the two thicknesses rolled on a tube or mandril under pressure, thus furnishing the body of the can. This is then cut off the roll and an aluminium top and bottom put on. The can is suitable for any type of food, fruit juices, etc. The used cans can be melted down for recovery of the aluminium.

Product (2) is called aluminized steel, and is produced by the welding of an inner and outer coat of aluminium foil to steel sheet by means of rolls with the aluminium foil over and under the steel sheet. Such cans can be treated with plastic material later.

The hubbub arising from this publicity has been criticised as something in the nature of a storm in a tea-cup. It is pointed out that other companies have made good progress along the tin-substitute line, but there are a good many questions still to be answered before the Reynold's process threatens tin. In particular there is the question of cost compared with tin-plating, the permanence of the hermetic seal, and the installation of new machinery or the re-vamping of old. In addition nothing appears to have been said about the allowance of aluminium obtainable in view of the very heavy restrictions recently imposed under the Controlled Materials Plan.

## Portuguese Wolfram Exports

(From Our Own Correspondent)

Oporto, September 11

The export licence position continues to be very unsatisfactory; the U.S.A. has a virtual monopoly, and makes the price accordingly. Rumour, for what that is worth, is that the U.K. quota for Portuguese  $WO_3$  will be about 200 tons a month, which means that one mine alone can fill the quota, and that others must look elsewhere, i.e., to the U.S.A. Exports to the U.K. in July were 196 tons which is approximately the rate anticipated for the future. Some small quotas have been granted to Sweden, but nothing to Germany. Exports of wolfram concentrates in July were 281 tonnes, besides 15 tonnes of tin, 31,949 tonnes of cupreous pyrites, 1,372 tonnes of  $MnO_2$  and 10 tonnes of white arsenic.

The new organization resulting from the Washington Conference deliberations does not appear to be working smoothly. The daily papers here recently published a notice that the present export taxes on wolfram and wolfram residues would be reduced to Esc. 4 and Esc. 1 per kilo., respectively. However, when the official notice was received, it transpired that in place of the Export duty of Esc. 40 for normal concentrates and Esc. 16 for residues, we are now to pay Esc. 36 + Esc. 4 for the normal and Esc. 15 + 1 for the residues per kilo, *plus ça change, plus c'est la même chose!*

## Western United States

(From Our Own Correspondent)

Barstow, Calif., September 10

The outstanding event of the past month has been the strike of the copper miners which was called on August 27 by the International Mine, Mill and Smelter Workers' Union. While the men actually on strike numbered 58,000, a total of 100,000 were laid idle through stoppage of work and refusal of other unions to cross picket lines. It is estimated that the strike reduced copper output 95 per cent, lead 65 per cent and zinc 40 per cent, creating a very serious handicap to the defence programme. The dispute was referred to the Wage Stabilization Board in Washington which requested the men to return to work pending the outcome of negotiations, which the men refused to do. The union, which was expelled from the C.I.O. over a year ago because of strong Communistic tendencies, is an outgrowth of the old Western Federation of Miners, always a turbulent organization which advocated and practised "direct action."

In July, the C.I.O. struck the Garfield Smelting Co. of A. S. & R. and gained some concessions. As I.M.M. and S.W. and C.I.O. are keen rivals, there is a general feeling that the former was prompted to call the strike in order to demonstrate to its members that it could do as well for them as C.I.O. Practically all copper producers are affected, but the brunt falls on the "big four," American Smelting & Refining, Anaconda, Kennecott and Phelps Dodge.

Following the refusal of the men to heed the request of the Wage Stabilization Board, the President, on August 30, appointed a board of inquiry with instructions to report to him by September 4. On August 31, Kennecott reached an agreement with its workers and it was hoped and expected the other companies would fall in line, but this failed of realization and the strike went on against the others. September 4, the President, acting under advice of the board of inquiry, directed the Attorney General to seek a court injunction against the continuance of the strike; such an order was issued by the Federal Court in Denver the next day and union officials at once recommended that members comply and return to work. By September 10, conditions were practically normal after two weeks of interrupted production.

It is interesting to note that this is the ninth time the President has invoked the Taft-Hartley Act on occasions of labour crisis, although it was passed over his veto in the first place and he has frequently denounced it and promised its repeal.

On August 17, the President authorized the release to private industry of up to 25,000 tons of copper from the national stockpile, of which about half has been transferred, sufficient to make up the deficiency caused by the July strike against the Garfield Smelting Co. Presumably similar releases will follow soon to offset the strike of the last two weeks.

### COLORADO

The Leadville drainage tunnel is very close to the Robert Emmett shaft, its first objective, and its effect is being felt. Water is being drained from the mines at the rate of five second feet—in excess of 3,000,000 gallons per day—and recession of water level up to 18 ft. per week has been reported from some workings. The Robert Emmett shaft is little over half the distance to the final objective, but completion this far will open up a great reserve of lead-zinc ore much needed at this time.

Operations made possible by the Carlton deep level tunnel at Cripple Creek are bringing discoveries reminiscent

of the days when that camp was the premier high grade district of the world. Latest is on the 2,700 level of the Ajax from which a selected shipment to the Carlton mill showed gold value of \$78,000 per ton. In furtherance of its enlargement programme to meet the terms of the contract recently entered into with the government, Climax Molybdenum Co., has let a contract for 20,000 ft. of development on its Stork level, which is 300 ft. below its present main operating level. Time limit of the contract is November 1, 1952.

### CALIFORNIA

Anaconda Copper, which owns the Darwin mine in Inyo County, is increasing the mill capacity from 300 to 435 tons daily, the addition being designed to treat the oxide lead ores of the mine.

### IDAHO

Calera Mining Company (Howe Sound) is now producing cobalt and copper-gold concentrates at the 600 ton mill at its Blackbird mine at Forney. The copper-gold concentrate is shipped to the smelter and the cobalt concentrate is being stockpiled, awaiting completion of the plant that Howe Sound is building at Garfield, Utah. Plans are under way to increase the mill capacity to 1,000 tons.

Monsanto Chemical Co. has awarded a contract for the erection of a plant at Soda Springs for production of phosphorus for both munition and agricultural use. Monsanto has been investigating the various phases of the situation for three years and has acquired leases on seven square miles of ground potentially valuable for phosphates. Western Chemical Corporation has also entered the Idaho phosphate field and is now operating an elemental phosphorus plant at Don as the initial unit of an extensive operation. These plants, with that of the Victor Chemical Co., now well under construction in Montana, will make the Idaho-Montana phosphate belt an important factor in world production.

Bunker Hill and Sullivan has commenced an improvement programme at its lead smelter in the Coeur d'Alene district. Blast furnace operation will be improved, a de-zincing unit will be installed which will recover zinc from the associated lead as a metal instead of an oxide dross. A new baghouse unit is included in the programme and this will give a higher gas concentration than at present which will make it profitable to recover the sulphur as a marketable product, should market conditions justify. A new main stack will be erected.

### NEVADA

In Gabbs Valley, Mineral County, Standard Slag Co. is shipping 600 tons of iron ore daily in fulfilment of a contract to ship a total of 200,000 tons to Japan. Mention has been made of a similar Japanese contract with the Iron Age mine in California. Combined Metals, in Lincoln County, appears to be living up to its name. The company has increased capacity of its Castleton lead-zinc mill to 1,000 tons daily and has leased two units of the World War II Basic Magnesium plant in the Boulder Dam area. It is also operating a perlite plant and erecting a 150 ton tungsten mill and a manganese concentrator.

Some idea of the scope of operations at the \$2,500,000 plant being built by Manganese Inc. at Henderson can be gained from the fact that contract has been let for two rotary kilns, each 10 ft. x 150 ft. The company has developed a flotation process which appears to be adapted to these hitherto refractory ores. Exploration shows the deposit to contain 2,500,000 tons averaging 15 per cent manganese.

## Prospecting and Borehole Drilling in the O.F.S.—II

By C. BICCARD JEPPE, M.Sc.(Eng.), A.R.S.M., D.I.C., M.I.M.M.

In the following extracts, which conclude the article entitled: "Shaft Sinking and Development in the Orange Free State Goldfields," by Professor Biccard Jeppe, which appeared in No. 2 of *Optima*, a quarterly review published by Anglo American Corporation of South Africa, readers will find particulars of the shaft sinking and cementation methods employed; a short description of the "grab" evolved to speed up shaft-sinking; an outline of the development problems encountered as well as comments on the need for a new conception of "ore reserves." Part I appeared in *The Mining Journal*, September 14.

The Karroo beds, from nil to more than 2,000 ft. in thickness, and overlying sandy or clayey measures, caused some trouble on a number of shafts in the installation of the shaft collar, but not more than on many other mines of the Witwatersrand. In these Karroo beds, shafts in all cases are fully concrete-lined. Little water has been encountered compared with the water from the fissured ground below the Ventersdorp Lavas.

In order to speed up sinking and shaft-lining operations, the shafts, whether rectangular, elliptical or circular, are equipped with Galloway stages. The only exception to this practice is the wide, rectangular Freddie's North and Freddie's South shafts, which retain the normal system of carrying the shaft equipment to within 20 to 30 ft. of the shaft bottom, which is protected by the usual platform. In all cases the "sets" are 10 ft. apart vertically, and so far only steel sets have been installed. Using the Galloway stage, an innovation in rectangular shafts, extra protection is provided for the persons at the bottom of the shaft and operations from the stage are facilitated; but shaft equipment cannot be kept nearer than about 60 or 70 ft. from the shaft bottom.

Below the Karroo beds come the Ventersdorp Lavas, varying in thickness from nil to more than 2,000 ft. In the Group shafts the Lava sections are lined only where necessary.

The Galloway stage proved extremely useful when, initially, the buntion holes were cut by drilling in the hard lavas (17 machines being used); but this practice, which took a considerable time, has been abandoned, first, in favour of putting in horizontal concrete strips, 2 to 3 ft. in depth, at 10 ft. vertical intervals, into which the buntions are fitted; and, latterly, continuous vertical strips, which offer less resistance to the ventilating air current.

In some cases, the horizontal strips in the Lava sections were carried right round the shafts, including the upcast area. As such strips offer considerable resistance to an air current, these sections will be completely lined in the upcast area. Later practice has been to leave out the horizontal strips in the upcast area and to use removable buntions set in boxed plates ("Cousin Jack" hitches) or similar devices, in the upcast compartment.

The change to vertical strips avoids the necessity for lining the upcast area; and at the double buntion on to which the partition wall is to be built, the vertical strip is designed to facilitate the binding of the wall when it is installed after shaft-sinking has been completed. Such installation should take only a few weeks.

### FULL CEMENTATION NECESSARY WHERE LARGE QUANTITIES OF WATER ENCOUNTERED

When water in large quantities (up to 40,000 gallons an hour) was struck in holes in the fissured ground just below the contact of the lavas and the underlying sediments ("agglomerate-conglomerates"), full cementation became necessary and considerable delay in shaft-sinking has resulted. In many cases, hundreds of bags of cement had to be pumped under high pressure into such holes before the flow was reduced to a manageable amount.

The mining Groups have evolved different methods of dealing with this quite unexpected water-fissure factor. At first, cementation (the pumping in of cement under the high pressure of from 2,000 to 3,000 lb. per sq. in.) was resorted to only when the flow of water through a hole exceeded, say, 500 gallons per hour.

All the mines of the Group are now on "full cover," that is, cementation covering the whole of the shaft-sinking operations. This entails a very considerable delay in sinking (as indicated in Table IV, which shows the loss of time due to the necessity for cementation in the Western Holdings and Free State Geduld shafts during the last 18 months). The "full cover" by cementation is obtained by putting down a "pattern" of diamond drilling holes. The "pattern" varies to some extent on the different shafts, but is in all cases designed, as far as possible, to intersect any fissures that may be present, so that they can be sealed off by cementation. The normal "pattern," consists of 10 to 16 holes. If more than, say, 300 gallons per hour are struck in an individual hole and if the flow cannot readily be sealed off, then the "pattern" which carries the "cover" to 15 or 20 ft. outside the perimeter of the shaft, is increased to 22 holes. The holes in some shafts are 100 ft. in length, but this length is rather difficult to handle; and later practice, which appears likely to be extended to all the shafts of the Group, is to sink 70 ft. length diamond-drill holes.

In the shafts of the Group, cementation is continued until the holes are reasonably well sealed with cement. Commonly two cement pumps are used. A compromise is made between the delay in sinking operations and the amount of residual water still flowing from these cemented holes.

### SHAFT-SINKING OPERATIONS

Shaft-sinking, which is completely stopped while diamond-drilling is in progress, is then continued, each round consisting of from 140 to 144 holes, with 6 to 10 pilot holes 3 or 4 ft. longer than the "round" holes. Up to 22 rock drills are used, and blasting is done electrically. Sinking is continued down to a depth of about 10 ft. less than the "cover" of the diamond-drill holes. Then a new "pattern" is drilled, and so on. Thus a complete "cover" for the whole depth of the shaft is obtained. The final effect is that, depending on the conditions in the individual shafts, there is a residual water flow in the shaft from 1,000 to 10,000 or 12,000 gallons per hour. There are definite indications that, as the shafts deepen, this quantity of water is diminishing with time. Draining is already almost complete down to a depth of about 2,000 ft. in some of the shafts.

In the circular shafts being sunk in the Virginia area, complete "cover" is obtained by drilling a "pattern" of 16 or more 40 ft. length holes, using percussion rock drills, through "towers," as was practised on some of the mines sinking through dolomite. Cementation is continued until the flow of water is negligible (of the order of 100 gallons per hour or less). For this it may be necessary to re-drill

holes already cemented, drilling through the seal as many as six times; and, if heavy water fissures or fissured ground is met, the delay in sinking operations may amount to weeks. The final effect aimed at is a total residual flow of not more than 300 gallons per hour, and this has been attained at the bottom of the shafts at present being sunk.

#### SPEEDING UP SHAFT-SINKING WITH THE "GRAB"

The heavy delays in the shaft-sinking operations, due to the need for cementation, have led to an intensive campaign to speed up shaft-sinking through "covered" ground. On the Free State Geduld Mine a specially-designed "grab" has been evolved, with a positive air-controlled, instead of a weight-controlled, "bite." The "grab" weighs about 3 tons and the engine to work it about 1½ tons. The capacity of the "grab" is 0.8 ton. The use of the "grab" is one form of that mechanization which is being developed to a greater extent on the Free State mines than elsewhere. It enables the sinking labour force to be reduced by more than 100 Natives—that is, from over 300 Natives, the normal complement for a sinking shaft, to fewer than 200 Natives.

For rapid shaft-sinking, the time cycle (comprising a complete round drilled, blasted and cleaned, with equipment installed) should be under eight hours.

With the "horizontal strip" method, the time cycle to complete a 4 ft. round varies from 8 to 10½ hours, depending upon ground conditions. The same applies to the "vertical strip" method. In general, two such rounds are completed in 24 hours, together with the installation of steel buntons. Under favourable conditions, however, it is possible, during the course of a month, to complete additional rounds. With the use of specially-designed "grabs" (working from a second independent stage slung below the main Galloway stage), experience has shown that in normal ground it should be possible to complete two 5 ft. rounds in the same specified period, again with the possibility of gaining extra rounds during the course of a month. The "grab" has been introduced and tried out with great success on one shaft, after much experimentation on the surface; and its use is being extended to sinking operations in other shafts of the Group mines.

In the southern area of the goldfields, circular shaft-sinking (which is accompanied by shaft-lining) is greatly speeded up by the use of double stages, either 20 ft. vertically apart, or, preferably, 30 ft. apart, to facilitate the lining operations over a 20 or 30 ft. lift, respectively.

An interesting development in the equipment of some of the circular shafts of the southern area will be the replacement (when equipment follows the completion of

shaft-sinking) of steel buntons by shaped (streamlined), 17 in. x 7 in., vacuum-ized, spirally-reinforced, concrete buntons. This practice is being introduced because, in some areas, the water has been found to cause excessive corrosion on steel buntons. The danger of corrosion is naturally being very carefully watched in all the steel-equipped shafts.

During the shaft-sinking period the main pump stations, for use in connection with sinking operations, are cut at intervals of 1,000 ft. As sinking proceeds, a small, temporary chamber is cut 500 ft. below the last main pump station, but the temporary chamber is abandoned as soon as the next main pump station has been cut and equipped. The permanent pumping system of the mine consists of two main pump stations. The first is situated 3,000 ft. below surface. The second station is placed at the bottom of the mine, or at a maximum depth of 3,000 ft. below the first pump station.

The return airway chamber, the water-control dam and the browbin are excavated during sinking operations. This enables a rapid start to be made with development when shaft-sinking has been completed. The shaft walls are lined to some 12 ft. or more below the station floor and the ore-pass to the browbin is also developed. The total operation of cutting the station, with its ancillaries, takes about 23 days, during which time only about 90 ft. of actual shaft-sinking is done.

An innovation has been introduced on the Group mines, in the form of a man surface loading level 17 ft. below the surface. This enables an excavated tunnel-way to be carried to the Native hostel, with a branch to the European change-house. The arrangement is of considerable practical importance as it protects the Natives and Europeans when the surface weather is bad; and it facilitates the control of Natives entering and leaving the shaft. The tunnel can also be used for special issues of stores, such as oil, cheese sticks and bread.

#### DEVELOPMENT

Almost equally important, from the point of view of time, is the rapidity with which "preliminary" development (up to the stage of actual production) is carried out. It is usual on the Witwatersrand, before starting production, to develop sufficient ore reserves tonnage to provide the mill with ore for at least two years. This generally requires some 50,000 to 100,000 ft., or more, of development, and takes about 18 months from the completion of shaft-sinking and equipment.

The average time taken to sink a modern shaft through normal ground depths of from 3,000 to 5,000 ft., has been

TABLE IV  
Delays in Shaft Sinking Due to Cementation  
Western Holdings and Free State Geduld Shafts (Period January, 1950—June 30, 1951)  
Delay in Days

Shaft	January 1—June 30, 1950		July 1—December 31, 1950		January 1—March 31, 1951		April 1—June 30, 1951		Total—18 months	
	Days	% of Time Lost	Days	% of Time Lost	Days	% of Time Lost	Days	% of Time Lost	Days	% of Time Lost
W.H. (1).....	36.67	20.3	74.33	40.4	28.6	31.8	48.3	53.1	187.9	34.4
W.H. (2).....	—	—	51.25	28.0	11.8	13.1	24.0	26.4	87.05	16.0
F.S.G. (1) ...	23.5	13.0	33.5	18.2	5.6	6.2	31.6	34.7	94.2	17.3
F.S.G. (2) ...	14.67	8.1	27.33	14.9	60.6	67.3	32.0	35.2	134.6	24.7
TOTALS...	74.8	10.4	186.4	25.4	106.6	29.6	135.9	37.3	503.75	23.1



about 2 to 2½ years (up to 3 years in more difficult ground and, in at least one instance, 4 years in very difficult ground). Thus, the total period during which overhead expenses continue without production of gold has been, commonly, 3½ to 4 years.

In the Orange Free State goldfields, intersection of heavy, water-bearing fissures and fissured ground and the necessity to seal off the flow of water have seriously delayed not only shaft-sinking operations but also development. It appears probable that the average shaft-sinking time in the Free State will be 3 years or more, and that the "preliminary" development will be longer than normal; and, of course, overhead charges are likely to be correspondingly higher. This position, however, will be relieved to some extent by the fact that much of the development ore will be rich enough to put through the reduction works. The ore in general will probably be of a higher grade than on the normal Witwatersrand mine. Further, many mines have decided to erect reduction plants before any development has been done. This is contrary to Witwatersrand practice and will compensate for much of the time lost in shaft-sink and development.

#### EXTENSIVE MECHANIZATION

On the Orange Free State goldfields all the latest methods for securing rapid advance in underground development are being used. Mechanization is being extended as far as possible, not only to save costs but, more particularly, to save labour and accelerate operations. "Jumbos" (trolleys completely fitted with six rock drills and all the equipment necessary to drill an end); "drill carriages" (a smaller variety of "Jumbo"), with an upper deck to facilitate the drilling of top holes; and "air-leg" rock drills, whereby round drilling is simplified and speeded: all these are in general use. The drill steel is provided with tungsten-carbide bits, with "Rand Lease type" triple ferrule rubber band shanks. The air pressure aimed at is about 95 to 100 lb. per sq. in., which is considerably higher than the average on the Witwatersrand. All blasting is done with electric detonators.

For cleaning out the development ends, mechanical shovels are used, with 4 ton to 8 ton automatic bottom-discharge trucks, in all the main workings at Welkom; and 2 ton side-tipping and 10 ton automatic bottom-discharge trucks (36 in. gauge) at St. Helena.

The footage so far developed at St. Helena and at Welkom is shown in Table V. It is expected that development will have been started in other shafts by the end of this year.

In the main headings (12 ft. by 10 ft. or 11 ft. by 10 ft. in size) by-passes are put in every 750 to 1,000 ft. with "transfers" (for replacing full trucks by empty trucks)

some 75 ft. from the face. On the Group mines, using "district" mining, twin headings are developed some 30 ft. apart, with "through" connections every 250 ft. One heading in the footwall is used for the incoming air and the other heading for the return air, and, by closing off in turn all the connecting crosscuts except the last, fresh air can be brought up near to both ends by auxiliary fans feeding the development faces. Where reef development is being done, the return airway is about 30 ft. up the raise at the point from which stoping will take place. The overlap system of ventilation is used in all development ends, with about 3,000 to 4,000 cu. ft. of air per minute exhausted. At greater depths this will probably be increased to 5,000 cu. ft. of air per minute for each end. In some cases twin headings are 30 ft. apart, both in the footwall.

#### "JUMBO" DEVELOPMENT

Experience with "Jumbo" development (e.g., at Marievale Consolidated Mines, Ltd.) has shown that, in normal ground, footages of up to about 1,200 ft. per month can be reached, six or more rounds being drilled and cleaned out in 24 hours. Unfortunately, however, as already shown at St. Helena, this speed of advance cannot be taken for granted in the Free State, where it is often necessary to deal with water-bearing fissures.

On the St. Helena property, development operations are not completely "covered" by cementation, which is only practised when quantities of water of over, say, 200 or 300 gallons per hour are encountered in a hole. On the Group mines, the practice is to "cover" the development completely by diamond drilling, from small sidings in one of the twin headings, to a depth of 250 ft., along the heading, to "cover" both the twin headings; and if water is encountered, complete "cover" cementation is resorted to until the water zone is passed. Cementation is continued until the quantity of water has been reduced to a manageable amount, but complete sealing of the holes is not aimed at, if the delay is too long. When the heading has advanced 200 ft., a further set of diamond holes, 250 ft. in depth, is put in, thus giving an overlap "cover" of 50 ft.

When no advance "cover" is maintained, it is rare that a length of more than about 300 ft. of ground can be developed without resorting to cementation. Thus full advantage cannot be taken of rapid development by "Jumbos" and similar mechanical equipment. Where continuous "cover" is used, development footage has attained as much as 600 ft. or more per month in an end. (Note.—Apparently, the main water fissures are encountered more across the strike, through the dipping measures, than along the strike.)

The most modern arrangements are being installed at the shaft bottoms for hoisting rock. Large ore bins, one

TABLE V  
Development Footage Data

	Footage Driven	Footage on Reef	Reef Sampled	Footage Payable	Per cent Payable	Payable In.-dwt.
	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>		
St. Helena Gold Mines Ltd.						
To December 31, 1950.....	34,673	12,045	12,045	6,215	52	295
March quarter .....	4,545	2,345	2,345	1,205	51	468
June quarter .....	10,066	2,330	2,330	525	23	407
Total to June 30, 1951.....	49,284	16,720	16,720	7,945	48	329
Welkom Gold Mining Co. Ltd.						
To December 31, 1950.....	9,133	242	235	180	76.6	522
March quarter .....	13,923	1,074	1,035	570	55.1	353
June quarter .....	22,362	6,318	6,255	3,325	53.2	342
Total to June 30, 1951.....	45,418	7,634	7,525	4,075	54.2	352



for reef and one for waste, fed from the ore chute line or haulage, deliver the rock into a belt tunnel, where a 56 in. belt, some 400 ft. in length, conveys the rock to the shaft hoisting boxes.

At the surface, the broken ore and waste are taken to stockpiles. Under the reef stockpile (which is fed from both shafts) is a belt tunnel. A 56 in. belt, serviced by an automatic shaking feed on a movable carriage, draws rock from control boxes under the pile and conveys it to the reduction plant which, on each mine, is situated at the shaft farthest away from the town of Welkom. In the tunnel under the waste rock pile, the waste rock is taken by trucks, travelling by gravity, to be hitched on to the endless rope haulage to the waste dump.

A further factor has to be taken into account in the exploitation of the Free State mines. The development work so far accomplished (see Table V) has indicated that, in addition to block faulting on a large scale, minor faulting is prevalent to a far greater extent than on the average Witwatersrand mine. In addition, it appears that the payable ore may occur in lenses. The maximum stretch so far found of continuous reef development is not more than about 1,000 ft. This does not mean that the reef is missing but that faulting has interfered with its continuous distribution on the same strike of horizon. This may not be found to be the case everywhere, but provision must be made for the possibility.

#### NEED FOR NEW CONCEPTION OF "ORE RESERVES" IN O.F.S.

If it be a general condition, then a new conception of the term "ore reserves" will have to be reached on the Free State gold mines. On the Witwatersrand, the term "payable ore reserves" applies only to blocks of ground of which the reef perimeter (except in the case of faults or dykes) has been exposed and found on the average to be payable and to be so situated as to be ready for mining. In the Free State, it may be found that the reef level development, which must be reasonably straight and of constant gradient, exposes only in part the upper and lower sides of the block; and the value of the blocks may have to be based more on values in the raises (raises being more suitable for following faulted reef than drives). The reef values also appear to be more irregular than is usually the case on the Witwatersrand.

It is possible, therefore, that ore reserves will be based largely on samples at 5 ft. intervals in reef raises. The exposed reefs in the drives would, of course, be taken into account. Ordinary stope sampling may be partially or completely eliminated.

It is well known that, in "gully" stoping, the first operation (the opening up of the raise for about 30 ft. on each side) is very efficient and cheap. At St. Helena, reef raises are being put up at 72 ft. centres; and it is possible that, on the mines of the Group, the distances between raises may be very appreciably reduced compared to the normal practice on the Witwatersrand.

The possibility that a new conception of ore reserve blocks may be necessary may also lengthen the "preliminary development" period. It can be expected, therefore, that it will be some time before reduction plants will be working at full capacity.

There is no reasonable doubt but that the Orange Free State goldfields contain very large quantities of payable ore which can be worked at a good profit by the layouts at present used or projected. The unexpected feature of water-bearing fissures has seriously delayed shaft-sinking and is already causing considerable delay in development, but these difficulties are being met with the greatest energy

and initiative and will undoubtedly be overcome. The most satisfactory layout, where depths exceed 3,000 or 4,000 ft., appears to be the provision of twin circular shafts, as a unit, opening up "districts" by twin haulages. The incoming air would pass from the footwall heading up into the reef horizon heading; then through a single 400 ft. long stope (thus limiting the period of heating up by rock in the stopes); back into the footwall heading of the level above, where it would be cleaned and then cooled by a small refrigeration plant; and then passed to the reef horizon heading into another stope. This treatment would be renewed on each level. Below a depth of about 4,500 ft., surface refrigeration, combined with underground refrigeration at strategic points, is probably advisable; or underground refrigeration would be practised, also with small refrigeration units after each stope as described above. Below a depth of 5,000 ft. such a layout, or one on similar lines, appears to be essential.

#### DRAINAGE—TWO POINTS OF VIEW

As there is strong evidence that the new mining area is already being drained of water to an appreciable extent by shaft-sinking and underground development, some authorities expect that, with the increase in mining operations, such draining may be extensive, perhaps complete, down to the major working depths, within a reasonably short period. It is with this idea in view that, on some mines, holes are not completely sealed by cementation, appreciable drainage capacity being left. Other authorities prefer to seal off water occurrences in all shafts and main development as completely as possible, with the intention that, before stoping operations are started, special drainage holes can be drilled through the "covered" areas into the uncovered areas to expedite the flow of the water from the ground above the working areas.

In general, a compromise between the two points of view is commonly accepted. On several mines, where large ore reserves are expected to be available at comparatively shallow depths, and where the reef extends from these shallow depths to a depth of 5,000 ft. or more, shaft-sinking is being suspended at appropriate depths to enable a start to be made with development in the higher levels, where the rock temperatures are not unduly high. The object is to provide ore at an earlier date for the reduction works. But it is also expected that such operations may drain off much, possibly most, of the water in the fissured rock areas, and so greatly facilitate subsequent mining operations at deeper levels.

#### CONCLUSIONS

As will have been gathered from the preceding discussion, many, if not all, of the mines are to be opened up on the "district" principle, which has proved so effective on the Western Reefs Exploration and Development Co.'s mine. But, for actual stoping operations, more use may be made of raises placed closer together, which would also serve to define ore reserves. "Hot points," such as might be found in long haulages or crosscuts, would be individually cooled by air-electric machines or similar equipment. Opening up on the dip line could be by underground twin circular shafts and twin headings, in the case of reefs with appreciable dips; or, where the reef is flat, by twin circular shafts from the surface. On such lines the new goldfields could be exploited to their fullest extent in spite of the great difficulties that have been, and still are, encountered. In this way, or by some equally or more efficient method still to be devised, it will be done.

## Reports of H.M. Inspectors of Mines—1950

The North-Eastern Division's report prepared by Mr. C. W. Scott reviews the further increase in mechanization which took place in the Division during the year. At four collieries machine cutting replaced hand-getting; conveyor faces have replaced tub stalls in three collieries, and pillar workings in a fourth; while Meco-Moore loaders, including the new low-seam model, were in use on 13 faces and Huwood loaders were used on 17 faces. A Mavor & Coulson hydraulic stripper, after a successful run at Elscar Main, was transferred to the Parkgate Seam at Denaby Main Colliery, but it has been taken out temporarily pending a reorganization of the face. At seven collieries curved jibs were used and the use of a down-curved jib in the Meltonfield Seam at Monkton Main, resulted in considerably improved face conditions. To cut a 20-in. dirt band in the Low Fenton Seam at Wharnciffe Silkstone, satisfactory results were obtained from the use of two jibs on a turret machine.

Mr. Scott also gives figures for the numbers of locomotives in use underground, and states that there are 124 Diesel and four battery locomotives in use. The numbers of trunk conveyors installed have also increased, as have the number of man-riding haulages. Pneumatic stowing has continued with success at Bullcroft, Markham, Upton and Hatfield and its use has been extended to Barnsley Main and Bentley Collieries.

Good progress has been made with several large-scale reconstruction schemes. Skip winding was introduced at Wheldale; surface drifts have been put into operation at Billingley, Handsworth and Primrose Hill, and preparations are in hand to convey coal direct to the screens through a new surface drift at Wombwell Main. At Nostell Colliery, a new design of safety bridge in use at shaft insets has the novel feature of sliding clear if the cage is moved whilst it is in position. It is of the collapsible type with fenced sides and usual signal locks.

### EAST MIDLAND DIVISION

The East Midland Division's report, prepared by Mr. W. B. Brown, gives further evidence of the good work carried out by Meco-Moore cutter loaders, Huwood loaders and a Mavor & Coulson Samson stripper. Compared with 1949 the number of Meco-Moore cutter loaders at work in the Nottinghamshire district increased by ten to forty-five; twenty of these machines being installed at three collieries, namely, Thoresby Colliery with eight, and Welbeck and Rufford Collieries with six each. Six Huwood loaders, Mr. Brown reports, are giving good results at Silver Hill Colliery. The Mavor & Coulson Samson stripper installed in the Top Hard seam at Clipstone Colliery attained a record output of 4,000 tons in one week, with an output per manshift figure of 10.7 to the loading point compared with 8.8 tons for the other power loaders. At New Hucknall Colliery, a German type coal plough (Kohlenhobel) was installed at the beginning of March last in conjunction with a Panzerforderer conveyor and the G.H.H. system of roof support. Teething troubles experienced in the early stages were later overcome by modifying the plough by the fitting of wedges, to give a downward lead to the plough blades which overcame its tendency to ride upwards.

Seven 100 h.p. Hudswell-Clarke Diesel locomotives with 3½ tons capacity mine cars are operating at Thoresby Colliery between the skip winding plant and four conveyor panels. At Bestwood Colliery the Lancaster surface drift has reached the "bunkers" level, 100 ft. below the High Main seam and two subsidiary drifts completed, one to the base of the proposed bunkers and the other to the High Main seam. (Details of the reorganization at Best-

wood Colliery were given in our issues of August 3 and August 10.)

In the North Derbyshire district, Mr. Scott tells of thin seam Meco-Moore cutter loaders being installed at several collieries and of a Mavor & Coulson Samson stripper undergoing experimental trials at Wingfield Manor Colliery in conjunction with a Panzerforderer conveyor. If success attends the trials, it is planned to have three such installations at this mine. A brief reference of the continuous mining system now in operation at Bolsover Colliery states that increased output resulting from the introduction of the system has not been at the expense of safety. The manager at Shirebrook Colliery has designed a skip for use in connection with the Sullivan Slusher for the mechanical removal of roadhead ripping debris into the gateside packs. The system, it is reported, shows promise.

Perhaps the major feature of this division's report is the description of the American type Continuous Miner at Donisthorpe Colliery. Illustrations contained in the report show the salient features of this versatile machine, which carries six cutting chains on a retractable head. After a brief description of the Continuous Miner in operation, Mr. Scott relates that in a single shift an advance of 104 ft. was made and the tonnage produced in winning out 7,500 yards during the year was no less than 75,000 tons.

Mechanization progress in the North-Western Division as reported on by Mr. G. Hoyle, records that a number of reorganization schemes were completed during the year. At Huncoat Shaft, the tiny tubs formerly in use have been replaced by tubs of 17 cwt. capacity, and the work previously done by one of the well-known Burnley chain haulages is now done by a Hunslet Diesel locomotive. Diesel locomotives were also introduced at Sutton Manor and Wood Collieries.

In the Northern Division the report prepared by Mr. T. A. Jones is almost wholly taken up with information concerning accidents and their prevention. No new shaft sinkings in the division were begun during the year, but the driving of two large drifts from the surface for a new mine named Havannah was started in Northumberland and good progress has been made. A beginning has also been made with the de-watering of the large areas of abandoned and water-logged workings in South-West Durham.

Mr. T. A. Rogers, reporting on operations in the South-Western Division has devoted practically the whole of his report to matters concerned with administration and accidents and their prevention.

### SCOTTISH DIVISION

Mr. H. R. Houston, giving his report for the Scottish Division in which the tragic accident at Knockshinnoch Castle colliery took place, says that the work of colliery reconstruction in the division has continued to forge ahead. Twenty-two surface drifts were in full production during the year, yielding 1,379,085 tons and 15 others were in the course of development at the end of the year. The sinking of the two shafts at Rothes Colliery was greatly delayed by heavy floods of water, which difficulty has now been largely overcome.

Reports of H.M. Inspectors of Mines for the year 1950 can be obtained from H.M. Stationery Office.

North Eastern Division .....	Price 1s. 3d. Net
East Midland Division .....	Price 1s. 6d. Net
North Western Division .....	Price 1s. 6d. Net
Northern Division .....	Price 1s. 3d. Net
South Western Division .....	Price 1s. 3d. Net
Scottish Division .....	Price 1s. 6d. Net

## Machinery & Equipment

### The B.J.-D.35 B.B. Shortwall Coal-Cutter

The 35-BB Shortwall Coal Cutter, manufactured by British Jeffrey-Diamond Ltd., Wakefield, is a continuous duty Shortwall machine with 40 h.p. A.C. electric motor. Its makers claim that in it is embodied every modern feature of dependability, operation and economy to ensure the longest life possible, withstand rough usage, and require the least time to repair and service—each an essential factor in the profitable mining of coal.

Movement of the 35-BB is controlled by two wire rope drums located on opposite sides of the machine. These power-driven drums, one being a feed drum and the other a handling drum, are independently controlled. Having power on both drums at the same time is a distinct advantage in handling the machine efficiently, and makes it possible to manoeuvre it quickly.

This independent operation of the feed and handling mechanism permits the machine to be sumped in and the cut across the face started with one setting of the jacks. While cutting, the machine can be made to assume any desired angle to the face without stopping.

When pulling the machine from the cut, the feed can be stopped and the rear end of the machine pulled back the required distance by using the power-driven handling rope—a feature which ensures quicker and easier control of the machine.

Since all electrical parts are of mining-type construction, the electrical equipment is protected from dirt, in and the cut across the face started with one setting of the jacks. While cutting, the machine can be made to assume any desired angle to the face without stopping.

Abridged specifications are: Dimensions (overall), width 44 in., height 26½ in., length 67½ in. (less cutter bar); Motor, 40 h.p.; Voltage, up to 650 v. A.C. (3 phase 50 cycle); Standard length of cutter bar, 7 ft. 6 in.; Thickness of kerf, 5½ in.; Feed speed, 25 in. per min.; Handling speed: 19 ft. per min.

### Holman Drifters

We have just received from Holman Bros., Ltd., Camborne, Cornwall, Section E of the General Catalogue, giving details of the company's drifters, for wet or dry drilling, ranging from light duty machines, such as the S.L.200 to the S.L.16A, which is an extremely powerful machine, designed to meet the heaviest duties. All drifters in this range can be supplied as vented models fully complying with dustless drilling regulations. The powerful rotation prevents stalling even in very heavy formations and this, with even still further improvements to the Holman circular valve, is claimed to ensure high penetration speed and low air consumption.

### German Bucket-Wheel Dredgers for Australia

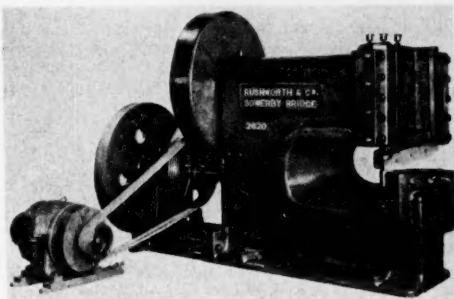
The State Electricity Commission of Victoria has ordered two 1,100-ton bucket-wheel dredgers from Stahlbau Rheinhausen, Rheinhausen, West Germany, at a contract price of £A600,000. Each dredger has 10 buckets mounted on a large wheel; both are electrically-operated and mounted on 9 ft. wide caterpillar tracks.

It is hoped to have the first machine assembled and operating at Morwell brown coal field in two and a half years' time. It will be used primarily for removing overburden—at the rate of 1,900 tons an hour. The second machine will be used exclusively for coal winning with an output of 1,300 tons an hour.

### Rushworth Scrap Shearing Machines

Industrial demand for scrap metals of all kinds can be assisted by the quick disposal of scrap at the various yards and to facilitate this, Rushworth Scrap Shearing Machines were designed for rapid cutting.

Three models are at present in production, all of massive construction, yet simple to operate and maintain, with years of trouble-free operation. Large numbers have been



The Rushworth Scrap Shearing Machine

supplied to all parts of the country, as well as overseas. Capacities: ½ in., ¾ in., and 1½ in. mild steel plate, respectively, also round and square bars, boiler tubes, etc., and non-ferrous materials.

Further details may be obtained from Morrison, Marshall & Hill Limited, 44/45 Tower Hill, London, E.C.3. Telephone ROYal 1461 (P.B.X.).

### Expansion of South African Associate Company of David Brown & Sons

With the addition of a new heavy machine shop and bronze foundry, both of which have been erected and fully equipped during the last twelve months, the first stage has been reached in the development of Precision Equipment (Pty.) Ltd., of Benoni, Transvaal, which is associated with David Brown & Sons (Huddersfield) Ltd. The spacious new machine shop has been equipped with a comprehensive selection of gear-cutting and gear-finishing machine tools, most of which have been built and shipped by the associate organization in the U.K. This plant includes worm milling and grinding machines, gear hobbess, worm wheel generating machines, and the latest testing equipment. The company is now able to commence manufacture of a well-known David Brown product, the Radicon Worm Reducer, which is now being built in the large range of sizes and ratios, for direct supply to the South African market. Another standard product is the David Brown "Cone-Ring" flexible coupling, which is also being made in various sizes.

So extensive is its new plant capacity that the South African company is also able to undertake the manufacture of gearing products of all types. For instance, the equipment of the new heavy shop includes two of the largest machines of their type in the Southern hemisphere. These are a 16 ft. gear hobbing machine, weighing over 130 tons, and a 300-tons vertical boring machine, of similar capacity. These massive machines will be used essentially for the manufacture of large gears and pinions required by the South African mining industry.

The new bronze foundry, erected on the same site, has also been fitted with the latest type of equipment, including heat treatment and plating plants.

## Metals, Minerals and Alloys

**Copper.**—While the strikers at the U.S. mines and refineries returned to work at the beginning of last week, full output of metal is not expected until the current week. Repercussions from the strike shortages are expected to be felt for months to come. Copper consumers remain extremely short of supply, and many have had to cut their operations.

The Copper Institute figures for August reflect, so far as the United States are concerned some of the reduction in output caused by the copper strike. The output of crude, including secondary metal, was 73,977 s.tons against 82,577 in July. Production of refined was even more affected at 79,613 s.tons (93,258). On the other hand, domestic deliveries improved to 105,063 s.tons (101,095). Refined stocks were slightly higher at 70,812 s.tons (68,045). World production of crude elsewhere than in the U.S. was 113,999 s.tons (116,033). Refined output was 105,907 s.tons (104,599), and refined stocks 161,269 s.tons (159,472).

U.S. Defence Mobilizer, Mr. C. E. Wilson, is conferring with domestic producers on the possibility of increasing copper output. It is thought that discussions will centre round the issue of raising price ceiling of 24½c. for domestic copper. The Administration is now negotiating to open up four large low-grade propositions in Arizona. In addition to the decline in imports this year, it is estimated that the strike has cut supplies by some 40,000 s.tons. The President of the Revere Copper has called for a further release of 50,000 tons from the stockpile, additional to the 25,000 tons already withdrawn.

Exports from Chile in August were 28,673 tonnes (19,363 in July), as compared with 30,115 tonnes a year ago. The maritime strike is now ended. President Videla has instructed the Chilean delegates to the International Materials Conference, to oppose the suggested agreement for world copper allocations on the ground that it would lead to lower prices for the 20 per cent. of the output which Chile can negotiate in the open market. While the British decision to come into line with United States price encourages expectations that an international agreement on allocation may be realized, the attitude of other parties, more especially Chile, emphasizes the difficulties which would still have to be overcome.

The Northern Rhodesian output in June was 27,956 tons compared with 27,792 tons in May.

**Lead.**—United States demand has continued keen with Mexico virtually sold out. Lead sales in August were about 5,000 tons down at about half the figure of August, 1950. The N.P.A. have reduced allocations of domestic metal by 33 per cent as a result of the recent strike. The reduction in part reflected the lower output in July which was 30,746 s.tons compared with 32,681 tons in June.

**Tin.**—The *New York Times* reports that Mr. Morrison and Mr. Gaitskell, in recent meetings with United States Secretary of State, urged a curb on stockpiling, but apparently without the proposal being received with acclamation. The U.S. Bureau of Mines reports that consumption of primary tin in the U.S. declined by 2,028 tons in the second quarter of the year. R.F.C. stocks at the end of June were 58,048 tons against 62,382 tons a month earlier, and since the beginning of the year tin stocks declined by 14,603 tons. Bolivian exports in July were 2,854 tonnes making the seven months total 20,145 tonnes as compared with 17,840 tonnes in the same period

of last year. It is reported that negotiations for a long-term contract between the U.S. and Bolivia will be resumed on Monday. The Bolivians are said to be asking 150c. per lb.

It was announced from America that Mr. C. W. Nichols will again lead the United States delegation at the Rome meeting of the International Tin Study Group next week.

The F.M.S. Chamber of Mines and the all-Malayan Chinese Mining Association have asked the Malayan Federal Government to invite the U.S. Government to send experts to Malaya for an enquiry into the facts about tin production. They express alarm at the detrimental effect of recent American comments on the good relations between Malayan tin producers and the U.S. The U.S. State Department has accepted the invitation and the Mission is expected to start towards the end of October. Mr. Ferguson, Chairman of the Singapore Chamber of Commerce and of the Straits Trading Co., at the Chamber's half-yearly meeting, strongly criticized interested parties in the U.S. for seeking to justify an intensification of monopolies and controls affecting Malaya's principal products, rubber and tin.

The Malayan output in August was 4,923 tons compared with 4,907 tons in July, and the total for the eight months is 37,845 tons against 38,768 tons a year ago. Shipping conference freight rates from the Straits to the U.S. will be increased by 10 per cent after December 1.

**Zinc.**—There is little to report about zinc this week, which remains extremely scarce in the U.S., where the G.S.A. is now reported to be selling metal originally destined for the stockpile to consumers. This probably qualifies the increased amount reported by the American Zinc Institute to have been delivered to Government stockpile account in August.

It is announced that Mr. Jess Larson, who, as noted last week, has been appointed Administrator of the D.M.P.A., has appointed Mr. Howard I. Young, president of the American Zinc, Lead and Smelting Co., as his Deputy Administrator.

The output of Northern Rhodesia in June was 1,890 tons against 1,855 tons in May.

The Indian Government is to appoint a committee to examine proposals to establish a zinc smelter in the country. In the past there was important production of zinc concentrates at the Bawdwin mines in Burma, which was exported principally to Germany. These mines are at present closed down, and the supply of concentrates must impose a limiting condition on any smelter project. The committee will be asked to recommend steps to assess ore supply at the Zawar mines in Rajasthan and elsewhere.

**Aluminium.**—As a result of the summer's drought, production of aluminium in Oregon is being curtailed, and the Bonneville power administration estimates that a monthly loss of some 7,500 s.tons of metal will result, unless the producers switch to more expensive steam-generated power, which might somewhat lessen the reduction. Shortage of rainfall has also affected the electric power supply in Austria, and the Ranshofen works have been cut from 105,000 kW to 75,000 kW from the beginning of the month.

**Asbestos.**—*Asbestos*, of Philadelphia, reporting on the situation in the trade in September, says there has been a definite ease-off in the demand for medium length fibre and shorts, but crude and grades 3, 4, and 5 are still in over-demand. Heavy demand continues for all types of asbestos textiles. Brake-linings remain at an all-time high volume, with requirements more likely to increase than diminish. Trade in asbestos paper has slightly declined in volume. The drop in automobile production and other



equipment has reduced demand for millboard. High pressure insulation material is in increased demand, while the usual autumn increase is beginning to appear in low-pressure material. The market for corrugated asbestos remains strong, and the asbestos cement board situation has further developed and now become very firm. There has been a decided increase in asbestos siding and roofing shingles. The asphalt tile market continues at the record figure reached last year, though it may decline during the winter until next spring.

**Bismuth.**—U.K. imports in July rose to 50,075 lb. compared with 32,925 lb. in June, and are now well ahead of the seven months imports last year.

**Cobalt.**—Imports of cobalt into the U.S. in the first four months of the year, were 50 per cent down in April, as compared with March. In terms of metal content they were Belgian Congo, 882 s.tons; Belgium, 370 s.tons; Canada, 13 s.tons; France, 2 tons.

U.K. imports of cobalt in July were 397,883 lb. compared with 242,215 lb. in June. But the total is still substantially below imports of the first seven months of 1950.

**Nickel.**—The N.P.A. has stated that defence and essential civilian demand are double the immediately available supply of the metal. Canadian exports in the first half of the year were down as compared with the same period 1950, the figure being at 32,596 s.tons compared with 36,289 s.tons.

**Titanium.**—Indian Government geologists have reported the discovery of titaniferous sands containing up to 50 per cent  $TiO_2$  at Ratnagiri, about 300 miles south of Bombay, which it is hoped may yield some 5,000 tons next year. These geologists think that the production of ilmenite from the Travancore deposits might be increased to 500,000 tons yearly and, with the Bombay discoveries, promise India a world monopoly in titanium. However, this view seems to ignore recent developments in Quebec and the United States.

**Wolfram.**—There is nothing fresh to report from recent weeks. Buying is on a steady day-to-day basis with the price remaining at 525s. per unit c.i.f. A certain amount of stuff is coming out of Portugal but this is to liquidate existing contracts entered into before the Ministry of Materials took over.

**Silver.**—The Federal-Mogul Corporation has announced a programme to manufacture silver bearings for use in tank engines, and is placing orders for special machinery and equipment for their manufacture. During the last war, the Corporation produced large quantities of silver bearings for the aircraft industry.

**Platinum.**—Rumours are circulating New York that a price ceiling, expected to be \$103 per oz. may be imposed shortly as compared with the current ceiling of \$90-\$93 for large scale business. Despite the time of the year when purchases for the Christmas trade are normally active, the jewellery trade is reported to be quiet, with the black market reflecting this situation.

## The London Metal Market

(From Our Metal Exchange Correspondent)

Last Thursday the price of tin on the London Metal Exchange suffered a considerable drop which was attributed by many people to the reported statement by Mr. Symington of the R.F.C., that America now had a substitute for tin. This he stated was aluminium foil covered with a plastic substance which could be used in place of tinfoil for the manufacture of cans for food and other purposes. The

decline was short lived and the market rebounded later the same day on the realization that some time must elapse before general use of any such substitute could be effected, quite apart from the fact that aluminium is in short supply. It does not appear from any available statistical information that there is any real shortage of tin, and it seems that this statement is just another example of Mr. Symington's policy of using every possible means to depress the market.

Consumer demand here has been quiet and Continental enquiry practically negligible. There was a sharp contraction in the "backwardation" on Monday following an increase in stocks of tin in warehouses, with the expectation of further early arrivals, but the threat of a dock strike in London tended to off-set the effects of the stock increase.

Stocks of tin in London Metal Exchange official warehouses on the 15th instant were 1,577 tons compared with 1,128 tons a week earlier, an increase of 449 tons being the first advance shown in the stocks since the week ended August 4.

On Thursday the official close on the tin market was: Settlement price £945, Cash Buyers £940, Sellers £950; Three months' Buyers £905, Sellers £907 10s. In the afternoon the market was lower. Turnover for the day was 130 tons. Approximate turnover for the week was 410 tons.

The Eastern price on Thursday morning was equivalent to £914 15s. per ton, c.i.f. Europe.

## Iron and Steel

The substantial drop in steel production in the months of July and August accorded closely to the usual experience. Unfortunately, the sharp recovery, customary in September, is still delayed. Not only in this country but also in all the overseas markets, iron and steel is in short supply. British steel capacity has increased: but outputs are much below normal and in consequence of the shortage there are grave fears of unemployment during the coming winter in some of the steel using industries.

Fuel supplies are already short, not only in this country, but also in Europe. On this account a drop of as much as 20 per cent in French steel production is forecast. In the U.K. also there are warnings of a winter fuel crisis and already coke deliveries do not measure up to blast furnacemen's requirements. This in turn has prevented the expansion of pig iron production to the great embarrassment of foundrymen as well as the steel makers. As an indication of the gap between supply and demand it is reported that as much as £34 per ton has been paid for foreign pig iron.

But the most intractable problem is that of scrap. The higher prices now offered may in time bring in substantially bigger tonnages, but as yet the increase in deliveries has been very small. Agreement has at last been reached on the subject of German scrap exports. Under the new formula the U.K. is to receive 40 per cent of these exports, but the British share is not expected to exceed about 25,000 tons a month compared with monthly deliveries of 130,000 tons in 1949 and 100,000 tons in 1950.

At present the U.K. steel industry is working well below capacity. Works executives have been clearing maximum tonnages for export before the end of Period III and the issue of home orders with "D.O." and "P.T." priorities has been increased to such an extent that other home business is accorded scant attention. A winter steel famine is developing and there are apprehensions of grave unemployment in some of the steel using industries through shortage of supplies.

The re-rollers are experiencing growing difficulties in maintaining their mills in full operation. This arises from



the scarcity of steel semis. British makers are unable to provide as much material as formerly and Continental makers are heavily in arrears with their contractual obligations. Even the sheet mills are short of bars and slabs and it has become virtually impossible to place orders for sheet deliveries earlier than 1952.

## Coal

The Ministry of Fuel and Power reports the output of coal for the week ended September 15 as 4,401,100 tons, as compared with 4,419,700 tons in the previous week. Distributed stocks for the week ended September 8 were 14,478,000 (14,146,000). The number of men on colliery books for the week ended September 8 was 696,700 (697,400).

### SEPTEMBER 20 PRICES

#### COPPER

Electrolytic... £227 0 0 d/d

#### TIN

(See Metal Notes above for Thursday's Metal Exchange prices)

#### LEAD

Soft foreign, duty paid ... £180 0 0 d/d  
Soft empire, including secondary lead ... £180 0 0 d/d  
English lead ... £181 10 0 d/d

#### ZINC

G.O.B. spelter, foreign, duty paid ... £190 0 0 d/d  
G.O.B. spelter, domestic ... £190 0 0 d/d  
Electrolytic and refined zinc ... £194 0 0 d/d

#### ANTIMONY

English (99%) delivered, ...  
10 cwt. and over ... £390 per ton  
Crude (70%) ... £305 per ton

#### NICKEL

99.5% (home trade)... £454 per ton

#### OTHER METALS

Aluminium, £124 per ton.  
Bismuth, 27s. 3d. lb.  
Cadmium, 18s. 9d. lb.  
Chromium, 5s. 11d. lb.  
Cobalt, 17s. 6d. lb.  
Gold, 248s. f.o.z.  
Iridium, 465 oz. nom.  
Magnesium, 1s. 6d. + 2s. lb. according to quantity.  
Osmiridium, 435 oz. nom.  
Osmium, 470 oz. nom.  
Palladium, 48 10s. oz.  
Platinum (scrap), £27.  
Platinum, £27/£33 5s. nom.  
Rhodium, 445 oz.  
Ruthenium, 430 oz.  
Quicksilver, 73 10s. £74 ex-warehouse.  
Selenium, 25s. nom. per lb.  
Silver (bar), 78½d. f.o.z. spot and forward.  
Tellurium, 19s. lb.

#### ORES, ALLOYS, ETC.

Bismuth ... 50% 16s. lb. c.i.f.  
... 40% 14s. 9d. lb. c.i.f.  
Chrome Ore—  
Rhodesian Metallurgical (lumpy) £13 per ton c.i.f.  
" (concentrates) £13 per ton c.i.f.  
" Refractory £12 12s. per ton c.i.f.  
Baluchistan Metallurgical £13 18s. 6d. per ton c.i.f.  
Magnesite, ground calcined... £26 - £27 d/d  
Magnesite, Raw ... £10 - £11 d/d  
Manganese, Best Indian (Nominal)  
Molybdenite (85% basis) 103s. 6d. per unit c.i.f.  
Wolfram (65%), U.K. 525s. nom. c.i.f.  
Tungsten Metal Powder 35s. nom. per lb. (home)  
(for steel manufacture)  
Ferro-tungsten ... 33s. nom. per lb. (home)  
Carbide, 4-cwt. lots ... £30 3s. 9d. d/d per ton  
Ferro-manganese, home £39 17s. 1d. per ton  
Ferro-manganese, export Nom.  
Brass Wire ... 2s. 7½d. per lb. basis.  
Brass Tubes, solid drawn ... 2s. 1d. per lb. basis.

## Mining Men and Matters

Mr. W. M. Clark has been appointed a director of Mufulira Copper Mines, in place of Mr. W. A. Odgers, deceased.

Mr. K. A. Creery, President of the British Metal Corporation (Canada) Ltd., has been appointed a Director of the British Metal Corporation Ltd.

Mr. C. W. A. Ison has been elected a director of Exploration Co.

Messrs. C. W. Parish, M. W. Parish, A. E. Ford, E. T. Thornton-Smith and Major W. M. Henderson Scott are retiring from the board of Nanwa Gold Mines in favour of Mr. Percival Moore, Mr. T. Oliver Farnworth and Mr. Douglas C. Thomson, who have been co-opted to the board.

Norfolk Trust Co. (Prop.) Ltd., 801 Manlin House, Harrison Street, Johannesburg, have been appointed secretaries and transfer secretaries to Roberts Victor Diamonds.

The International Machine Tool Exhibition for 1952 will be held in London at Olympia from September 17 to October 4. For further information communications should be addressed to the General Manager, Machine Tool Trades Association, Victoria House, London, W.C.1.

The Economic Co-operation Administration and the Organization for European Economic Co-operation have contracted to sponsor three more "technical assistance missions" for inclusion at the World Metallurgical Congress in Detroit, October 14 to 19.

The Cornish Institute of Engineers will hold their first general meeting in the lecture theatre of the Camborne School of Mines on Thursday, September 27, at 7.15 p.m., when a paper entitled "Automatic Winding Practice" will be delivered by Messrs. O. T. Evans and P. H. Harvey. The paper will be illustrated with lantern slides.

The Institution of Mining Engineers will hold their general meeting at the Prince of Wales Hotel, Harrogate, on Saturday, October 27, at 11.15 a.m., when a paper entitled "Strata control and the influence on underground and surface damage," by Major N. E. Webster will be presented for discussion.

## Business Items

The Commercial Bank of Australia has announced that a branch has been opened at Huonville, Tasmania.

Mr. T. A. Crowe has joined the board of North British Locomotives as chief managing director.

Mr. C. L. Fisher has been appointed manager of the British sales division of Consolidated Pneumatic Tool Co.

Mr. E. A. Goodland has been appointed general manager of the United Sulphuric Acid Corporation.

Mr. D. C. Hitchings has joined the staff of Edmund Nuttall, Sons & Co. (London) Ltd.

Mr. Frederic Seebohm has been appointed a director of Barclays Bank (D.C. & O.).

Sir Arthur P. M. Fleming has been appointed to the position of director of research and education of Associated Electrical Industries.

Mr. H. Streets, formerly Chief Technical Engineer of Richard Sutcliffe, has been appointed Technical Director of the company.

Mr. J. A. J. Blanckensee and Miss E. P. Wood (Joint General Managers of the Raw Materials Division of George Cohen Sons & Co. Ltd.) have been elected to the Boards of Pollock Brown & Co., Westbourne Park Coal & Iron Co., and Southall & Hayes Coal and Iron Co.

North British Locomotive Co. has announced the receipt of an order from the South African Railways and Harbours Administration valued at £500,000. The contract, which was obtained in the face of intense competition, especially from Germany, is for 25 shunting engines and tenders.

The Quasi-Arc Co. have announced that arrangement are now in hand with The General Electric Co., Wotton, Birmingham, under which the Quasi-Arc Co. will be the sole concessionaires throughout the world for the G.E.C. Twin-Arc Metallic Arc Welding process.

Dr. C. Dannatt, director and chief electrical engineer of Metropolitan-Vickers, has been appointed director of research and education in place of Sir Arthur P. M. Fleming, who will retain his seat on the board. Dr. Dannatt has also been appointed assistant managing director. Mr. H. West, assistant chief engineer, has been appointed chief electrical engineer in succession to Dr. Dannatt and has also been appointed to the board of the company.

# The Mining Markets

(By Our Stock Exchange Correspondent)

Markets, which began by following last week's quiet trend, suddenly awoke to life at the end of the period. Rumours of a forthcoming general election were the main reason behind the improvement and this has now been confirmed, Polling Date being October 25. Gilt-edged alone continued in a depressed condition. The Nigerian Loan, after being oversubscribed, disappointed the Stags. It opened at parity with its issued price, 97 per cent, and after some wavering went to a discount.

Diamond shares showed great activity. Last week's optimism over the De Beers interim dividend was more than justified. The Board declared a double interim dividend of 60 per cent. De Beers Deferred Shares jumped and other issues rose in sympathy.

Kaffirs shook the dust of last week's depression from their feet and went ahead strongly. Finance houses were particularly favoured. Special buying of Union Corporation and Anglo American shares for French Accounts was reported, but a considerable broadening of public interest was the main reason for the all round improvement. The yields on many of the leading issues had risen to around the 6 per cent level. Almost alone, Vereeniging Estates showed a decline. This is accounted for by the issue of new shares now on the market, which currently command a premium of around 17s. Individual mines also benefited.

Orange Free State issues were patchy. There is a tendency in the market to criticize the very mixed borehole and development reports and to await further results, before entering into large scale commitments. There is no denying that some recent reports have disappointed the market and investors are distinctly more cautious than during the first flush of optimism some years ago. The announcement of good underground development figures

from some of the leading mines could make a great difference to this market, but these have as yet not materialized.

The comparative silence of the I.M.F. on the subject of gold price is puzzling. The representatives of some of the countries not at present benefiting from premium sales, are reported to have attended the I.M.F. annual meeting with the declared object of airing their views in no uncertain terms. While there is nothing definite to go on, it rather looks as though some private agreement has been reached, as otherwise their verbal restraint appears inexplicable. Whatever the result it seems clear that the U.S. does not intend to pay more than \$35 an ounce for gold.

Australian gold issues were rather quiet, but there were two points of interest. Gold Mines of Kalgoorlie announced that they are transferring their assets to an Australian Company and will liquidate in the U.K. It is understood that the consent of the Treasury will not be necessary for such a move as it does not legally come within the provisions of the recent Finance Act. The second point is that Kalgoorlie Electric, chief supplier of power to the mines, is paying no ordinary dividend this year against 7 per cent last year. It is understood that the mines objected to higher charges as their increased working costs had already swallowed all the benefit of devaluation. The matter is now under arbitration. This sidelight on inflated working costs and the impact of the fixed price of gold on the Westralian mines is of considerable interest.

The forthcoming general election, and the hope that dividend limitation will not materialize had an instantaneous effect on many shares of U.K. registered companies. Nchanga, Selection Trust, Tanks, Beralat, Lake George went ahead sharply, and other mines similarly affected were not slow to follow their example. The full effect of these changes is not, however, recorded in the list of prices below.

FINANCE		Price	+ or -	O.F.S.		Price	+ or -	MISCELLANEOUS GOLD		Price	+ or -	TIN (Nigerian and Miscellaneous)		Price	+ or -
		Sept. 19	on week			Sept. 19	on week			Sept. 19	on week			Sept. 19	on week
Africa & European.		32 1/2	+ 1/8	Alpha F.S.A.		11 3/4	- 3/4	G.F. Rhodesian		9 1/2	- 3/4	Amalgamated Tin		10 1/2	- 3/4
Anglo American Corp.		38 1/2	+ 1/2	Blinkpool		22 1/2	+ 1/4	London & Rhodesian		3 1/2	- 1/4	Beralat Tin		23 1/2	+ 1/4
Anglo-French		21 1/2	+ 1/2	Central Mining F.S.		5 1/2	+ 3/4	Matsya		2 1/2	- 1/4	Bisichi		3 1/2	- 1/4
Anglo Transvaal Consol.		38 1/2	- 1/2	Fr. d'Or		12 1/2	+ 1/4	Mysore		6 3/4	- 1/4	British Tin Inv.		16 1/2	- 1/4
Camp Bird		3 1/2	- 1/4	Freddies N.		11 1/2	- 1/4	New Guinea		14 1/2	- 1/4	Est. Lands Nigeria		8 1/2	- 1/4
Central Mining (Z. shrs.)		46 1/2	+ 2 1/2	Freddies S.		13 1/2	- 1/4	Nundydoo		7 1/2	- 1/4	Geevor Tin		13 1/2	- 1/4
Consolidated Goldfields		46 1/2	+ 1/2	F.S. Geduld		34 1/2	+ 1/2	Oreogum		3 1/2	- 1/4	Gold & Base Metal		3 1/2	- 1/4
Consol. Mines Selection		32 1/2	+ 1/2	Geoffries		29 1/2	- 1/4	Orovilla		14 1/2	- 1/4	Jant's Nigeria		7 1/2	- 1/4
East Rand Consols.		4 1/4	+ 1/4	Harmony		25 1/2	- 1/4	St. John d'El Rey		42 1/2	- 1/4	Sot Tin Area		11 1/2	- 1/4
General Mining		6 1/2	+ 1/4	L. d'Or		10 1/2	- 1/4	Zams		35 1/2	+ 1/2	Kaduna Prospectors		4 1/2	- 1/4
H.E. Prop.		36 1/2	+ 1/2	Middle Wits		25 1/2	- 1/4	Anglo American Inv.		4 1/2	- 1/4	Kaduna Syndicate		6 1/2	- 1/4
Henderson's Transvaal		11 1/2	+ 1/4	Ofsets		49 1/2	+ 1/2	Casts		37 1/2	- 1/4	London Tin		48 1/2	+ 1/2
Johnnies		3 1/2	+ 1/4	President Brand		22 1/2	- 1/4	Cons. Diam. of S.W.A.		4 1/2	- 1/4	Ribon Valley		1 1/2	- 1/4
Rand Mines		6 1/2	+ 1/4	President Steyn		18 1/2	+ 1/2	De Beers Pfd. Beare		16 1/2	- 1/4	United Tin		2 1/2	+ 1/2
Rand Selection		42 1/2	+ 2 1/2	St. Helena		28 1/2	- 1/4	Chartered		73 1/2	+ 2 1/2	SILVER, LEAD, ZINC			
Union Corporation		10 1/2	+ 1/4	T.F.S.C. & G.		9 1/2	- 1/4	Indian Copper		4 1/4	- 1/4	Broken Hill South		58 1/2	- 1/2
Vereeniging Estates		5 1/2	- 1/4	Virginia Deb.		74	- 3/4	Messina		6 1/2	- 1/4	Burma Corporation		3 1/2	- 1/4
Wits		30 1/2	+ 1/2	Virginia Ord.		13 1/2	- 1/4	Rhod. Anglo-American		62 1/2	+ 1/2	Consol. Zinc		34 1/2	- 1/4
West Wits		45 1/2	+ 1 1/2	Welkom		38 1/2	+ 1 1/2	Rhokana		21 1/2	- 1/4	Lake George		28 1/2	- 1/4
				Western Holdings		34 1/2	+ 1/2	Rio Tinto		22 1/2	- 1/4	Mining Trust		7 1/2	+ 1/2
								Roan Antelope		12 1/2	- 1/4	Mount Isa		48 1/2	+ 1/2
RAND GOLD				WEST AFRICAN GOLD				Selection Trust		49 1/2	+ 1 1/2	New Broken Hill		28 1/2	- 1/4
Blyvoor		50 1/2	+ 2 1/2	Amalgamated Banket		2 1/2	- 1/4	Thais Sulphur Br.		51 1/2	- 1/4	North Broken Hill		28 1/2	- 1/4
Brakpan		20 1/2	+ 1/2	Ariston		7 1/2	- 1/4	TIN (Eastern)				Rhodesian Broken Hill		22 1/2	+ 1/2
City Deep		2 1/2	- 1/4	Ashanti		28 1/2	- 3/4	Anglo-Burma		2 1/2	- 1/4	San Francisco Mines		35 1/2	- 1/4
Consol. Main Reef		2 1/2	- 1/4	Bibiani		10 1/2	- 1/4	Ayer Hitam		27 1/2	- 1/4	Trepca		3 1/2	- 1/4
Crown		4 1/2	+ 1/4	Bremang		3 1/2	- 1/4	Bangrin		30 1/2	- 1/4	BASE METALS & COAL			
Daggas		2 1/2	- 1/4	C.C. Main Reef		3 1/2	- 1/4	Boulder Perseverance		10 1/2	- 1/4	Amalg. Col. of S.A.		60 1/2	- 1/2
Dominion Reefs		1 1/2	- 1/4	G.C. Selection Trust		2 1/2	- 1/4	Gold Mines of Kalgoorlie		15 1/2	- 1/4	Associated Manganese		72 1/2	+ 1/2
Doornfontein		28 1/2	- 1/2	Kwaahu		4 1/2	- 1/4	Great Boulder Prop.		7 1/2	- 1/4	Chinese Engineering		2 1/2	- 1/4
Durban Deep		3 1/2	+ 1/4	Loddon & African Mng.		2 1/2	- 1/4	Kopond Dredging		12 1/2	- 1/4	C.P. Manganese		46 1/2	- 1/2
E. Daggas		26 1/2	+ 1/2	Lyndhurst Deep		1 1/2	- 1/4	Kinta Tin Mines		16 1 1/2	- 1/4	Satal Navigation		51 1/2	- 1/4
E. Geduld		52 1/2	+ 1/2	Marlu		2 1/2	- 1/4	Kramat Pulai		4 1/2	- 1/4	Mining Corp. of Canada		61 1/2	- 1/4
E. Rand Props.		4 1/2	+ 1/4	Nanwa		6 1/2	- 1/4	Malayan Dredging		14 1/2	- 1/4	Queomont		8 1/2	+ 1/2
Geduld		37 1/2	+ 1/2	Pangasinan		9 1/2	- 1/4	Pahang		14 1/2	- 1/4	OIL			
Grootevlei		16 1/2	- 1/4	Pangasinan		9 1/2	- 1/4	Petaling		13 1/2	- 1/4	Anglo-Iranian		5 1/2	- 1/4
Libanon		16 1/2	- 1/4	Pangasinan		9 1/2	- 1/4	Rambutan		17 1/2	- 1/4	Apex		47 1/2	+ 1/2
Lupatards Vlei		22 1/2	+ 1/2	Pangasinan		9 1/2	- 1/4	Siamese Tin		21 1/2	- 1/4	Burmah		61 1/2	- 1/4
Marievale		21 1/2	- 1/4	Pangasinan		9 1/2	- 1/4	Southern Kinta		14 1/2	- 1/4	Canadian Eagle Beare		36 1/2	- 1/4
Modderfontein B.		5 1/2	- 1/4	Pangasinan		9 1/2	- 1/4	S. Malayan		28 1/2	- 1/4	Mineral Eagle		27 1/2	- 1/4
Modderfontein East		37 1/2	- 1/2	Pangasinan		9 1/2	- 1/4	S. Tronoh		24 1/2	- 1/4	Shell		31 1/2	- 1/4
New Kleinfontein		32 1/2	+ 1/2	Pangasinan		9 1/2	- 1/4	Sungei Kinta		18 1/2	- 1/4	T.P.D.		37 1/2	- 1/4
New Pioneer		22 1/2	- 1/4	Pangasinan		9 1/2	- 1/4	Tekka Taiping		9 1/2	- 1/4	Trinidad Leasehold		31 1/2	- 1/4
Randfontein		18 1/2	- 1/4	Pangasinan		9 1/2	- 1/4	Tronoh		28 1/2	- 1/4	Ultramar		30 1/2	- 1/4
Robinson Deep		14 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Rose Deep		33 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Simmer & Jack		6 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Springs		9 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Sub Nigel		3 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Van Dyk		14 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Venterspost		28 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Vlakfontein		18 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
Vogelstruik		28 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
West Driefontein		6 1/2	- 1/4	Pangasinan		9 1/2	- 1/4								
W. Rand Consolidated		42 1/2	- 1/2	Pangasinan		9 1/2	- 1/4								
Western Reefs		42 1/2	- 1/2	Pangasinan		9 1/2	- 1/4								

## Company News & Views

### News and Views From Australasia

The general feeling in the gold mining towns and districts in Western Australia is depressed, writes our Australian correspondent.

Costs have overtaken the benefit following the rise in the price of gold resulting from the devaluation of the sterling, and the future is regarded pessimistically, unless an increase in the price of gold, or permission to sell, at least, some gold on the open market is agreed to by the International Monetary Fund. It is generally felt that, but for the late Labour Government's complete indifference to gold and the gold mining industry at the time South Africa obtained concessions, the Australian industry would be in a much sounder and more prosperous condition.

In his notes on mining activity in Queensland, our correspondent states that Mount Morgan's dumps of pyritic tailings form an important potential asset in sulphur, and he reports that the Queensland Government is investigating a proposal for the erection of fertilizer works in Central Queensland at an estimated cost of some £4,000,000, in which the use of Mount Morgan pyrite would undoubtedly be an important factor in consideration of the project which would require 70,000 tons of pyrite annually and 150,000 tons of coal.

At Mount Isa Mines, erection of the copper smelter continues to be delayed by shortage of steel. This arises from continued shortage of coal delivered to the steel works in New South Wales, which effectively restricts output, and to the second part of the campaign against the steel industry, in the holding up of ships carrying steel from works to centres of utilization, by organized shortage of crews.

The Tasmanian Government has cut power consumption throughout all industries in the island by 25 per cent. The cut is ostensibly due to prolonged drought which has greatly reduced the level in the lakes from which hydro-electric power is generated. Estimates place the time for refilling of the lakes to normal level at from 3 to 10 years, depending upon the intensity of the rainfall. It is also by no means improbable that the rapid demand for power in Tasmania has outstripped generating capacity, as is the case on the mainland, and that this may be an important contributory cause of the cut.

The position is unfortunate with the approaching call for power by the new aluminium industry, plant for which is now in course of construction. The zinc industry has already been seriously affected. Production of zinc metal at Risdon, by Electrolytic Zinc Co., which was 87,500 tons per year before rationing of power, has now been reduced to less than 70,000 tons; the deficiency cannot be made up by imports, and such industries as galvanized products, brass, paints, rubber, die casting alloys, zinc dust and zinc sulphate will be much reduced in activity. Mining operations in the north-east, north and west are curtailed, affecting the output of lead, zinc, copper, tin and wolfram ores.

New Zealand's declining gold mining industry has received a heavy blow by the recent collapse of workings in the Blackwater mine. This mine ranks next to the Martha Gold Mine, at Waihi, and is the deepest mine in the islands. The collapse, and the subsequent flooding of the workings, will seriously affect the future of the company. It is reported that the ventilation system has been destroyed and the pumps put out of action, for the trouble occurred in the south shaft, which is the ventilation and drainage shaft of the mine. The north shaft, which is the main haulage shaft, is undamaged, but the workings are rapidly flooding.

Production has declined in recent years and is now about 500 oz. per month, but the loss of this output will greatly reduce New Zealand's gold production, in view of the great decline in this industry. The decision of the Board as to the future of the mine is awaited, but as operations have been carried out under considerable difficulties for some time past, and as the cost of recovering and reconditioning the workings will naturally be heavy, the future is doubtful.

A report has been received that the dredge of Ngahere Gold Dredging Ltd. is being closed down temporarily because of dredging conditions and delay in granting the new claim licence. This is one of New Zealand's big dredges, with a capacity of 350,000 cu. yd. per month.

### Free State Development and Investment Corporation

The report of Free State Development and Investment to March 31, 1951 is interesting but disappointing. Drilling results in the Zand River block, it is stated, have been disappointing, and the mineral rights options over certain farms in this area will probably be abandoned during the current year. Drilling in the Virginia block has been completed and has indicated that over the majority of farms, payable reefs are not likely to occur and mineral rights options will be allowed to lapse on these farms. Of the five boreholes completed during the year in the Whites and Hennenman blocks, two gave payable values on the "A" reef, but no values were disclosed in either "B" or Basal reefs. Accordingly, further drilling will be carried out during the current year to determine the extent of the payable "A" reef. No drilling was undertaken in the Bothaville, Kroden and Kroonstad blocks.

During the year the company accepted further prospecting contracts over farms in the O.F.S., and at the close of the financial year held prospecting contracts totalling 60,889 morgen, of which 12,485 morgen have since been abandoned. Net expenditure written off during the year in respect of prospecting contracts amounted to £49,152. Additionally, the company holds rights of participation over 8,351 morgen, the amount expended during the year in this connection being £30,788.

During the year the company took up 38,605 stock units of 5s. each in Merriespruit Orange Free State Gold Mining, and at the fiscal year end it held 51,785 shares in Harmony Gold Mining and 236,024 stock units of 5s. in Virginia O.F.S.

### Powell Duffryn Creates Special Carry-Forward

The directors of Powell Duffryn in their report for the year to March 31, 1951 state that they have come to the conclusion that it will not be necessary to make any repayment of capital to stockholders. The group has embarked on new ventures, many of which are commitments of a long-term nature requiring considerable financial resources. The financing of these commitments is, in part, being met from funds received from the sale of its compensation stock receipts, which now amount to £10,000,000, a proportion of which is being re-invested in short-term securities. In view of the fact that many of these new ventures will not yield immediate profits and development losses will have to be met, the company has also decided to build up its carry-forward which at the end of March stood at £2,295,000. However, it is expected that new and substantial income will be available from 1953 onwards, which may save the group from dipping into this specially created carry-forward account. On the other hand, funds from this source will be made available for the payment of reasonable dividends if current earnings should be insufficient for the purpose.

After the annual meeting on October 10, an extraordinary general meeting will be convened at which it will be proposed that the capital be increased from

£14,160,471 to £16,000,000 by the creation of 1,839,529 new £1 Ordinary shares. This proposal bears no special significance as the board has neither the intention nor the need to issue any part of the capital for which authorization is sought.

Consolidated net profit for the year amounted to £604,934 against £647,073, which figure was struck after crediting a transfer from taxation reserves of £72,452 (£66,248), and providing for depreciation, £310,516 (£232,661) and taxation totalling £1,041,460 (£934,676). A final dividend of 5 per cent is recommended making 8 per cent (same), leaving the amount standing to the credit of the consolidated profit and loss appropriation account to be carried forward at £2,295,234 against £2,222,714 brought in.

## Company Shorts

**Mount Coolon Gold Mines N.L.**—This company has announced that it has disposed of the shares to which it is entitled in the new issue of Morning Star (G.M.A.) Mines N.L.

**Mining Merger Off.**—London & African Mining Trust have announced that the tentative arrangements for amalgamation with the National Mining Corporation have been dropped "as the time is not now favourable to the proposal."

**Progress at Wheal Ellen.**—Corderoy Mines has reported that the equipment required for dewatering the Wheal Ellen Lead Mine has been erected, pumping has commenced and that operations are now 39 ft. from the collar.

**Mount Lyell Disbands London Board.**—Cabled advice from the Mount Lyell Mining & Railway Company's head office in Melbourne states that the special resolutions authorizing the disbanding of the London board of directors and the conversion of the company's shares into stock were passed at the extraordinary meeting of shareholders on August 24.

**Union & Rhodesian Mining & Finance Co.**—Net profits for the year 1950 of this company after tax was £51,438 (£49,919) out of which a dividend of 1½d. (½d. per 2s. share) was paid absorbing £37,500, and the sum of £10,000 (£5,000) was transferred to reserves leaving the forward balance higher at £59,524 against £55,587. The book value of the company's investments increased over last year's figure by £238,196 to £847,374.

**Thistle-Etna Gold Mines.**—Working profit of Thistle-Etna Gold Mines for the year to March 31, 1951 amounted to £7,920, but after providing for depreciation, taxation and writing off development charges a loss of £11,733 resulted which, added to the debit balance brought forward of £13,298 gave a total debit balance to be carried forward of £25,031.

The annual general meeting will be held on November 13.

**Satmar Pays 12½ Per Cent.**—A preliminary announcement of South African Torbanite Mining & Refining Co. covering operations for the year ended June 25, 1951, showed that profit was £161,952 against £146,308. The company is maintaining its dividend at 10 per cent, but is paying a bonus of 2½ per cent. The carry forward at the fiscal year-end was £49,517 compared with £36,194.

**Roberts Victor Diamonds New Share Issue.**—Roberts Victor Diamonds are to offer to shareholders new shares in the ratio of one new share at the par value of 4s. for each existing share of 4s. held on October 7, 1951. Forms of acceptance and renunciation, valid for 14 days, will be posted to shareholders on or about October 11.

The purpose of this new issue is to provide the necessary capital required to carry out the company's exploratory and prospecting programme at the Roberts Victor mine.

**Rhodesian Corporation—Reduction of Capital.**—The scheme for the reduction of capital of Rhodesian Corporation has been confirmed by the High Court of Southern Rhodesia, and became effective on September 7, 1951. This involves the writing off of 1s. 8d. of each stock unit of 5s. each. In the circumstances the directors have decided to change the date of the end of the financial period to September 30. Thus, the new accounts showing the smaller capital will be for the 14 months ended September 30, 1951.

**Tanjong Tin Protests Against Dividend Limitation.**—The directors of Tanjong Tin Dredging have announced that they are lodging a strong protest against dividend limitation being applied to the company in view of the special circumstances existing. The company paid no dividend for the six years 1942/1947, followed by a 5 per cent interim in 1948, nil for 1949 and an interim of 20 and a final of 5, making 25 per cent for 1950. For 1951, two interims of 25 per cent each have been paid.

**Joseph Milne to Appeal to Privy Council.**—Joseph Milne, former joint managing director of New Union Goldfields, who is now serving a four year sentence for fraud falsitas and contraventions of the Companies Act is to apply to the Privy Council for leave to appeal against the conviction and sentences. The right of appeal to the Privy Council was abolished by the South African Parliament in the Privy Council Appeals Act of 1950, but Milne will contend that the abolition cannot affect his case which was pending at the time that the Act was promulgated.

**New Company Planned by Nine Eastern Tin Companies.**—Nine Eastern tin mining companies with head offices in Melbourne have made application for Capital Issues consent to form a company in which all nine companies would be merged by the purchasing, on a cash and share basis, of existing shares in the company.

The nine companies concerned are Tongkah Compound N.L., and Tongkah Compounds Nos. 2, 3, 4, 5; Kuala Lumpur Tin; Satupulo N.L.; Tinsongkhla N.L.; and Romipibon Tin N.L. No new capital will be invited from the public.

**Mining Trust—Mount Isa Scheme.**—Mining Trust has announced that in response to the recent offer by Mount Isa Mines to acquire the entire share capital of the Mining Trust, acceptances have now been received to the extent of 94.3 per cent.

This does not mean, however, that the scheme will be completed automatically, as Mount Isa still retains the right to withdraw if two further conditions are not fulfilled, namely, Court sanction to Mining Trust's proposed capital reduction and Treasury permission for the transfer of the Mining Trust's residence to Australia. These conditions may be waived by Mount Isa.

**Van Ryn Gold Mines Estate.**—The report and accounts of Van Ryn Gold Mines for the year ended June 30, 1951 show a gross revenue amounting to £28,064, but after meeting all expenses including taxation liability of £7,513, net profit was £4,053 as against £24,130 previously. However, profits were augmented by receipts from the sale of machinery plant, etc., to £26,019. The balance at the company's fiscal year end was £200,897.

An extraordinary meeting will be held immediately after the general meeting on September 26 when it will be proposed that a further repayment of capital of 2s. per share be made by reducing the nominal amount of the shares from 8s. to 6s.

**Companhia de Diamantes de Angola.**—The translation from Portuguese of the report and accounts of this company for the year 1950 shows that the total diamond production during the year was 537,967.05 carats (769,403.67 carats) to which must be added 899.51 carats collected during prospecting operations. In view of the continued prosperity enjoyed by the diamond industry, the company has decided to bring all its pans into full operation during the current year, which should enable it to achieve production of about 700,000 carats from approximately 1,200,000 cubic metres of gravel.

For the first five months of the current year, 255,280 carats were produced compared with 212,925 carats in the corresponding period of 1950.

**Nanwa Gold.**—A meeting of Noteholders of Nanwa Gold Mines has been called for September 28 next to consider the following three proposals:

- (1) The sale by the Company of assets of the Company not exceeding in value the sum of £50,000;
- (2) The application of the net proceeds towards payment of the Company's unsecured debts or otherwise for the purposes of the Company's business; and
- (3) The borrowing by the Company of sums not exceeding in the aggregate £50,000 against the issue by the Company of notes or other securities, provided that such notes or other securities ranking pari passu with the existing notes.

The suggestion is put forward by the Noteholders Committee for the future of Nanwa that the Mill should be shut down for a period that enables the Company to develop both surface and/or underground ores to the extent of assuring a definite production of ore over 2 years of 8,000 tons per month and the satisfactory treatment of that ore to bring extraction of 80 per cent of the gold content.

The Noteholders Committee believes that it must estimate its financial requirements and time lag without regard to the possible extraction of any gold during the six months from the beginning of November. The alternative, it is stated, to the continuance of operations would appear to be "an application to the Court for the appointment of a Receiver and Manager which would undoubtedly destroy the Company's credit and its chances of recovery."

Investigations by the Committee are stated to have yielded the following facts:

- (1) The proper and orderly development of the Mine has been sacrificed to the premature production of small and inadequate quantities of gold.



(2) There is no Metallurgist at the Mine and consequently that gold output is less than two-thirds of what it should be.

(3) The Mine is unlikely to produce sufficient gold from the sulphide ore body at present being worked, to break even with running costs for at least 12 months.

(4) It will be anything from 18 to 24 months before the production of sulphide ore moves in towards 12,000 tons per month.

(5) The Mill is equipped to deal with at least 12,000 tons of sulphide ore per month but not adequately equipped to deal with the oxidized ore reserve near the surface. This oxidized ore calls for the further cost in time and money of about 12 months and £100,000 respectively: that accomplished, production of ore could be stepped up considerably with a corresponding increase in the extraction of gold.

(6) Inadequate underground ventilation has also been a drawback to the employment of a full complement of men underground.

(7) No adequate filling system exists.

(8) The unsecured creditors amount to £28,600; they have helped the new Board by refraining from pressing the Company for payment.

(9) The new Board must find for September £11,000, running costs at the Mine; £950, half year's note interest; £3,000, general expenditure and £28,600 for the unsecured creditors. £8,345 can be counted upon as cash in hand. That leaves a deficit of £35,205 for September.

(10) The requirements of October amount to not less than £27,000.

It is also stated that the consent of the Capital Issues Committee has been obtained to the issue of £50,000 of notes still unissued from the original offer of £250,000 in July, 1949.

## July Mine Returns

### Gold

#### WEST AFRICA

**Amalgamated Banket.**—60,669 tons yielded 6,836 oz.; profit £3,933.

**Ariston.**—27,500 tons yielded £101,581; profit £37,038.

**Ashanti.**—20,000 tons yielded 16,024 oz.; profit £85,488.

**Bibiani.**—29,000 tons yielded 6,261 oz.; profit £14,469.

**Bremang.**—777,100 tons yielded 3,520 oz.

**Gold Coast M.R.**—8,240 tons yielded 2,697 oz.; profit £6,355.

**Konongo.**—2,110 tons yielded 2,176 oz; profit £9,972.

**Marlu.**—38,260 tons yielded 3,643 oz.; profit £8,250.

**Nanwa.**—4,000 tons yielded 563 oz.

#### INDIA

**Champion.**—16,900 tons yielded 5,096 oz.

**Mysore.**—20,428 tons yielded 4,705 oz.

**Nundydroog.**—11,200 tons yielded 2,814 oz.

**Ooregum.**—13,850 tons yielded 6,196 oz.

#### AUSTRALIA

**Boulder Pers.**—(July 17-August 14). 10,396 tons yielded 2,409 oz.

**Central Norseman.**—(July 17-August 14). 13,269 tons yielded 3,158 oz.

**Croesus Prop.**—(June 19-July 17). 7,269 tons yielded 1,662 oz.

**Gold Mines of Kalgoolie.**—(July 17-August 14). 13,137 tons yielded 4,002 oz.

**Kalgoolie Enterprise.**—(July 17-August 14). 4,559 tons yielded 1,414 oz.

**Kalgoolie Ore.**—(June 26-July 17). 10,805 tons yielded 2,954 oz.

**Lake George.**—17,070 tons yielded 1,486 tons lead conc.; 2,640 tons zinc conc.; 324 tons copper conc.

**Mount Isa.**—51,760 tons yielded 3,510 tons lead-silver bullion assaying 79.5 oz. silver per ton and 4,076 tons zinc conc.

**Mount Morgan.**—181,921 tons yielded 4,926 oz. gold; 392 tons copper.

**New Coolgardie.**—(July 17-August 14). 3,963 tons yielded 1,861 oz.

**Paringa.**—(June 19-July 17). 6,010 tons yielded 1,067 oz.

**South Kalgoolie.**—(July 17-August 14). 8,393 tons yielded 1,914 oz.

#### MISCELLANEOUS

**Brit. Guiana Cons.**—71,211 cu. yd. dredged yielding 331 oz.

**Cam & Motor.**—19,000 tons yielded £55,810; profit £22,440.

**Clutha.**—Dredge worked 403 hours yielding 672 oz.

**Frontino.**—9,927 tons yielded 5,711 oz.

**Geita Gold.**—17,000 tons yielded 2,800 oz.

**Martha.**—(June 23-July 14). 6,948 tons yielded 1,490 oz. gold, 9,597 oz. silver.

**Motapa.**—24,000 tons yielded 2,370 oz.; profit £3,463.

**Rhodesia Corporation (Fred Mine).**—3,800 tons yielded 640 oz.; profit £475.

**Rezende.**—6,500 tons yielded £12,706; profit £1,485.

**Rosterman.**—2,433 tons yielded 1,057 oz.

**St. John D'el Rey.**—35,800 tons; value of output £246,501.

**Sherwood Starr.**—2,325 tons yielded £2,662; profit £1,468.

**Thistle-Etna.**—4,000 tons yielded 417 oz.; profit £447.

### Tin

#### MALAYA

**Ampat.**—95½ tons tin conc.

**Batu Selangor.**—16 tons tin conc.

**Berjantai.**—51½ tons tin conc.

**Ipo.**—18½ tons tin conc.

**Jelapang.**—30 tons tin conc.

**Kamunting.**—173 tons tin conc.

**Kampung.**—50½ tons tin conc.

**Kinta Kellas.**—3 tons.

**Kinta Tin.**—37 tons.

**Klang River.**—34½ tons tin conc.

**Kramat Tin.**—39½ tons tin conc.

**Kuala Kampar.**—209½ tons tin conc.

**Kuchai.**—51½ tons tin conc.

**Larut.**—56½ tons tin conc.

**Lower Perak.**—80 tons tin conc.

**Malaysiam.**—5 tons.

**Pahang Consolidated.**—241 tons conc.

**Rahman.**—56½ tons.

**Rantau.**—31 tons tin conc.

**Rawang Conc.**—44½ tons tin conc.

**Rawang Tin.**—96½ tons tin conc.

**Renong.**—91 tons.

**Southern Kinta.**—375½ tons tin conc.

**Sungei Kinta.**—52½ tons.

**Taipung.**—47 tons tin conc.

**Tambah.**—14½ tons tin conc.

**Tanjong.**—106 tons.

**Tongkah Harbour.**—42 tons tin conc.

#### NIGERIA

**Amalgamated Tin.**—380 tons tin conc. and 14 tons columbite.

**Bisichi.**—41 tons tin and 12 tons columbite.

**Ex-Lands Nigeria.**—40 tons conc.

**Filani.**—4½ tons.

**Gold and Base Metals.**—37 tons conc.

**Jantar Nigeria.**—20 tons tin and 15 tons columbite.

**Keffi.**—16½ tons tin conc.

**Naraguta Extended.**—6 tons.

**Naraguta Karama.**—10½ tons.

**Naraguta Tin.**—19½ tons tin and 3 tons columbite.

**Ribon Valley.**—5 tons conc.

**Rukuba.**—1½ tons.

**South Bukuru.**—2½ tons.

**Tin Fields of Nigeria.**—1½ tons.

**United Tin Areas.**—8 tons conc.

#### MISCELLANEOUS

**Bangrin Tin.**—101 tons.

**Beralat Tin.**—197 tons wolfram conc. and 3 tons tin conc.

**Geevor.**—4,688 tons yielded 60 tons tin (65 per cent Sn).

**Kama Tin.**—21½ tons conc.

**Siamese Tin.**—139 tons.

**South Crofty.**—30.25 tons black tin.

## Coal & Miscellaneous Base Metals

**Amal. Collieries.**—625,695 tons coal.

**Apex Mines.**—91,278 tons coal.

**Dundee Coal.**—42,270 tons coal.

**Natal Navigation Collieries.**—129,843 tons.

**New Broken Hill.**—(June 24-July 21). 20,386 tons ore (assaying 7.9 per cent lead, 11.5 per cent zinc and 1.9 oz. silver), yielded 1,988 tons lead conc. and 4,110 tons zinc conc.

**Rhodesia Broken Hill.**—1,900 tons zinc, 1,200 ton lead and 18 tons fused vanadium.

**South African Coal Estates.**—142,194 tons coal.

**Springbok Colliery.**—71,540 tons coal.

**Veyheid Coronation.**—47,891 tons coal and 12,707 tons coke.

**Wankie Colliery.**—190,285 tons coal sales and 7,905 tons coke sales.

**Witbank Colliery.**—115,459 tons coal.



## Topical News in Brief

**Brazilian Zinc Refineries to be Encouraged.**—The Brazilian National Economy Council has approved a Bill to exempt zinc ore and blende from payment of import duties. The object is to encourage local refineries to increase capacity in view of the world shortage.

**Iron Ore Production in Goa.**—The Japanese Export Bank has approved a long-term loan of 500,000,000 yen to aid a Japanese company and a company in Goa to develop iron ore production in Goa, according to Reuters correspondent in Tokyo.

**Australia to Produce Crawler Tractors.**—The International Harvester Company of Australasia Pty. Ltd. plans an expansion of its manufacturing programme by adding Diesel tractor engines and a small crawler tractor to its present output schedules.

**New Hydro-Electric Power Station in Norway.**—An underground hydro-electric power station at Aurdal, Central Norway, is undergoing final tests before adding 50,000 kW to Norway's power supply. The machine hall, with its turbines, is over 100 yards long, 20 yards high and 17 yards wide.

**New Factory for Hydraulic Equipment in South Africa.**—A factory for the manufacture of hydraulic presses, compressor plants, hydraulic lifts and cranes is to be built at Lillietown, Boksburg, according to Reuters Johannesburg correspondent. The owners will be Danish Industries (Pty.) Ltd., 10, End Street, Johannesburg.

**Utilizing Waste Methane Gas.**—Methane gas now wasted in coal mining might eventually be used to supply a large part of the power required in mining, according to Sir Alfred Egerton. Some of the air pumped into the mine for ventilating purposes could be pre-heated to a temperature at which methane would burn. When mixed with the gas, combustion would take place, he said. Then the hot gases would drive a gas turbine.

**Indian Steel Company's Expansion Plan.**—Estimated expenditure by Tata, India's largest iron and steel works on its expansion and renovation programme has been increased from Rs.260,000,000 to Rs.330,000,000. It is planned to raise the plant's capacity in six years to 935,000 tons of steel, according to Mr. J. R. D. Tata, the company's chairman. The increase in the capital expenditure estimate is attributed to the rise in world prices for plant and machinery required.

**Ymuiden Blast Furnaces to Raise Output.**—The Ymuiden Blast Furnaces and Steel Co. (Koninklijke Nederlandsche Hoogovens en Staalfabrieken) plans to raise its steel output from 300,000 tons annually to 570,000 tons, states a Reuter report from Amsterdam. A new company, N. V. Breedband, has been established which, it is expected, will provide for the urgent demand for thin steel sheets while tinplate will also be manufactured. Work on the plant has already begun.

**New Institute for Soviet Russian Coal Industry.**—A U.S.S.R. planning-technological and experimental institute of the Ministry of the Coal Industry is being organized in Moscow. The new institute will do planning and scientific research work on the introduction of advanced technology into engineering factories producing for the coal industry. It will study the latest methods of organizing production and labour at these factories and provide them with technical assistance.

**Australian Locomotive Orders for U.K.**—The West Australian Railways have ordered 48 Diesel electric locomotives from the Metropolitan-Vickers Electrical Co., Trafford, Manchester. The Australian General Electric Pty. Ltd. has also received a West Australian Railways order for 18 400 h.p. B.T.H. Diesel electric locomotives: they will be equipped with Davey-Paxman Diesel engines and the electrical and control equipment will be manufactured by the British Thomson-Houston Co., Ltd., Rugby.

**Japan Switches Coal Imports.**—Japan will import coal in future from India instead of from China, the Kyodo News Agency reports. The agency said Japan would negotiate for 1,000,000 tons of coal a year from India, enough to cover her import needs at their present rate. Previously, Japan imported only 100,000 tons of Indian coal a year, because Chinese coal could be obtained cheaper. Japan was also planning to negotiate for 500,000 tons of iron ore annually at the trade conference with India which opens on September 25.

**Exploitation of W. Tibet's Mineral Wealth in Progress.**—According to the Srinagar, Kashmir, correspondent of *The Times*, a general survey of Western Tibet is in progress under the supervision of a Chinese-Russian collaboration group. A Russian technical group is searching for uranium and other radio-active minerals, and petroleum. A Note and comment under the title: "Is Tibet's Mineral Wealth Invader's Objective?" appeared in *The Mining Journal*, December 8 1950.

**Canadian Aid for Pakistan.**—Canada and Pakistan have worked out economic principles on which initial Canadian aid to that country under the Six Year Colombo Plan would be based. Details of the principles were not disclosed, but reports indicate that it was believed likely they would include extension of Canadian technical and financial assistance to help Pakistan build more hydro and irrigation projects and encourage greater industrial production.

**Mining Machinery at Vienna Autumn Fair.**—An extensive range of new machinery was on view at the Vienna Autumn Fair. It included a large American tipper, designed for a load of nine tons and equipped with a Diesel engine having five forward gears and reverse. It has low pressure tyres and is capable of developing a speed of up to 46 kilometres per hour on swampy ground. Also on view was an American electric shovel filler, designed for use in mine gallery and tunnel construction.

**French Coal Supplies Assured.**—Coal supplies to French industry will be assured this year, M. Jean Marie Louvel, French Minister for Industry and Fuel, has told the Industrial Production Committee of the National Assembly. He said that consumption requirements are estimated at 75,000,000 tonnes this year; domestic output will be 55,000,000 tonnes and the missing quantities will be covered by imports including 4,700,000 tonnes from the U.S. and 6,200,000 tonnes from Germany. Minor deliveries will come mainly from Poland, Belgium, the Netherlands and Britain.

**New Mining Company Formed.**—A new company, Bestwood, Fraser & Weir, which is an association of three companies at present operating in Great Britain, South Africa and the U.S.A., has been formed as a private company. "To provide a full range of consulting and mining engineering services in these three countries and elsewhere."

Sir Eric Young, who resigned from the National Coal Board in December, 1950, and who was for many years managing director of the Bolsover Colliery Co., is one of the directors of the new company.

**Colorado School of Mines Scholarship for Ceylon.**—The Colorado School of Mines has offered a scholarship in mining, tenable for a maximum period of six years, to a *bona fide* resident in Ceylon. The scholarship, which is valued at between Rs.1,500 and Rs.1,695 per year, exempts the holder from the payment of tuition fees only, but does not include deposits and students fees. It also makes no provision for the passage and for living and other personal expenses. Only open to men aged 22 to 26 with a University degree, consideration will be given, however, in the award of the scholarship to those who have experience in mining.

**Iron Ore Prospects of Brazil.**—When sufficiently developed, the iron ore deposits in the Belo Horizonte area of Brazil will rank with the most valuable in the world according to Mr. Philip Guild, of the U.S. Geological Survey. However, Mr. Guild, on his return to the United States said, according to a Reuter despatch from New York, that hundreds of millions of dollars would have to be spent and probably another generation would pass before the resources were producing to capacity. He added that about one million tons of ore were now moving out of Ouro Preto each year, but this was "only a drop in the bucket" compared with the potential volume.

**Miners' International Federation Congress.**—The Miners' International Federation at its 35th Congress held recently in Luxembourg, has called for the socialization of all European coal mines. A resolution declaring socialization has become a necessity for economical and political reasons was adopted. Each country, the resolution said, must find its own appropriate form of socialization.

The Congress also agreed to launch a campaign to improve miners' living standards in under-developed countries. This followed an appeal by Kanti Mehta, Secretary of the National Mineworkers' Federation of India. The Federation also confirmed resolutions calling for a 40-hour week for all coal miners and a 38½-hour week (including winding time) for underground workers.

**Miners to go to University.**—Forty-five men in the coal mining industry and twenty-three from outside have been offered National Coal Board university scholarships in mining engineering and allied subjects. This is the fourth successive year in which the Board have offered 100 scholarships to men who have taken their Higher School Certificates or subjects at advanced level in the General Certificate of Education. Most awards are for students to read mining engineering, but a few are for mechanical and electrical engineering and fuel technology. After graduation, scholars will undergo practical training and advanced technical instruction, as well as tuition in the fundamentals of management to prepare them for posts of responsibility in the industry. N.C.B. scholarships cover the whole cost of education and in addition, there is a maintenance allowance which may amount to £300 a year.

## SOUTH KALGURLI CONSOLIDATED

The 38th Annual General Meeting of South Kalgurli Consolidated, Ltd., was held at the offices of the Company, 1, Broad Street Place, London, E.C.2, on Thursday, September 20, 1951. Mr. T. Pryor, D.S.O., M.I.M.M., Chairman of the Company, presided.

The following is an extract from the statement by the Chairman:

In considering the accounts for the year to March 31, 1951, it is interesting to note that they show the results of a full year of gold sales on the devaluation basis, as compared with the previous year, which included sales at the higher rate for only seven months. This is the principal reason for an increase in sales of bullion from £230,900 to £264,600. As will be seen from the details of expenditure, cost of mining and treatment also rose from £190,900 to £1,224,500, thus wholly absorbing the improvement in sales of bullion. This means that despite the higher gold price and an extra tonnage milled of 5,309 tons, the gross profit was unchanged, and after charging depreciation and administration expenses, the balance to profit and loss account was lower at £31,838 by £2,126. After debiting the interim and second interim dividends for the year, which together totalled 35 per cent, as in the previous year, the balance carried forward is practically unchanged at £13,407.

On the 21st level, the length of payable ore exposed on No. 2 cross lode is considerably less than in the levels above, because at the horizon of the 21st level, the lode is disturbed by faults. The disappointing results on the No. 2 cross lode have been more than offset by further discoveries on Nos. 4 and 6 Caunter lodes, the two new lodes mentioned in my speech last year. The exposure at the 21st level of a length of 370 ft. of ore worth 6½ dwt. per ton over an average width of 8 ft. is a highly satisfactory feature of the work on No. 6 Caunter lode. The ore reserves remain unchanged as regards tonnage when compared with last year, but their average gold value has slightly increased.

The outstanding feature of the present position is the continuous rise in the cost of wages, power, railway freight and stores, which has caused the total working costs in Australia to reach £A.2 15s. per ton, an increase of 5s. 8d.A. during the year. The price received for gold remained unchanged at £A.15 9s. 10d. per f.o.z., whilst working costs in Australia rose to £A.13 1s. 10d. per f.o.z., compared with £A.11 3s. 10d. for the previous year. Since the close of the financial year costs on the mine to mid-July have risen by 15s.A. per oz. of gold sold (equivalent to 5.10d.A. per ton), and there are still further increases in basic wages and other charges, the effects of which have not yet been felt. The benefits received from the alteration in gold price in September, 1949, have now been cancelled by the rising costs of production. In recent months the price of wool has fallen from its peak levels, but it should be remembered that the Australian wool clip of 1950/51 brought into the country £A.360,000,000 more than the wool sales of the year before. Moreover, the price realized for the annual wool clip of 1950/51 was equal to roughly three-quarters of the value of the entire gold production of Australia for the past hundred years. Such a large and sudden increase in the volume of currency entering the country makes it small wonder that the purchasing power of the Australian pound should fall or that the cost of producing gold in Australia should rise. With these conditions in Australia, and with taxation in Great Britain designed to deter companies from making profits either to reward risks already taken or to be ploughed back into the business for new equipment, it is difficult to plan ahead. Capital expenditure of about £16,000 must of necessity be spent in the near future to provide new air compressors for the mine and a steel headframe for Halmahuta shaft. These are essential items of plant to replace equipment worn out by long service. Consideration is also being given to the question of converting the main shaft hoisting engine from steam to electricity, which would enable the mine to be worked to several hundred feet below its present bottom level at the 21st horizon.

The problems affecting the Kalgoorlie gold mining industry were, laid before the Premier of Western Australia during his recent visit to England. We have been assured that the Western Australian Government will do everything in its power to help the gold industry at Kalgoorlie. Strong representations to the Federal Government of Australia have been made by the Western Australian and Victorian Chambers of Mines for Australian gold producers to be allowed to sell gold on the open market. It is not yet known whether these representations will have the desired effect. The immediate outlook is still full of uncertainties, but shareholders should derive some consolation from the knowledge that their property is a good one and has responded well to development in depth during the past few years.

The Report was adopted.

## CONSOLIDATED TIN SMELTERS

The Twenty-Second Annual General Meeting of Consolidated Tin Smelters, Ltd., was held on September 13, in London.

The following is an extract from the statement by the Chairman, Mr. Ernest V. Pearce, A.M.I.M.M., which was circulated with the report and accounts for the year.

Production of tin in concentrates for the calendar year 1950, as revealed by the International Tin Study Group, totalled 168,000 tons as compared with 162,000 tons in 1949.

The Far Eastern producers—Malaya, Thailand and Indonesia—each showed an increase in their production while the production of Bolivia and Nigeria declined.

The tonnage of concentrates treated in both of our Smelteries during the year was in excess of that in the preceding year.

Because of the emergency, no prospecting of any moment has been carried out in Malaya for years; and this factor, if it continues, must have serious results on the production of tin there in the years to come.

The outbreak of the Korean war in June, 1950, resulted in an increased demand for tin and prices on the London and Singapore markets advanced gradually for a time. The desire of some countries to obtain tin for stockpiling further increased the demand and forced the price to a record figure of £1.615 per ton on the London Metal Exchange on February 14, 1951. This rapid increase can only be ascribed to the rush for tin by certain countries. Fortunately, for the industry, this high price operated for one day only and a recession started on the next day. I venture to suggest that no responsible tin producer in the world had any desire to see the price maintained at so high a level, knowing as they did that such a high price must bring its own unfavourable repercussions.

Early in March, 1951, there was issued in the United States a Report by the Preparedness Sub-committee of the Committee on Armed Services, United States Senate, which accused the tin producing countries of "gouging" the U.S.A. as a consuming country. The Report is full of mis-statements and inaccuracies and proves that the authors were entirely ignorant of the tin industry and the conditions ruling in that industry. Furthermore, Senator Lyndon Johnson, who signed the Report as the Chairman of the Sub-committee, accuses the British, Bolivian, Belgian and Indonesian producers of constituting a cartel. I can only repeat what has been said by others, that there is no cartel in existence to-day in the tin industry. The accusation that the producers were responsible for increasing the price and that they "gouged" the U.S.A. is wrong in substance and in fact, for what is apparently unknown to the Preparedness Sub-committee is that the miners themselves have no part whatever in the fixation of the prices on the London Metal Exchange or the Singapore market. By producing to the maximum of their ability they have made available to the markets every ton of tin possible.

The attitude of the United States—as the world's largest consumer—in withdrawing from purchasing tin on the open market, after accumulating a very large quantity for their stockpile and particularly after clamouring for increased production of tin from all countries, savours very much of a cartel. Sole purchasing and selling in the hands of a government, combined with unnecessary restriction of end-uses, do certainly constitute a most effective form of cartel.

The recession in prices which the U.S.A. desired has been attained by the twofold action of that country in ceasing to buy tin and in the reduction of the price by Reconstruction Finance Corporation on no less than nine occasions. Tin has now reached a price when some miners must find that it ceases to be economic for them to produce tin, and the U.S.A. is consequently driving some of them to the point at which their mines will have to be closed down.

Inaccurate statements, such as are contained in the Lyndon Johnson Report, are not conducive to the best relations between consumers and producers, and I suggest that some attempt at verification before publication would have prevented the ill feeling which has been engendered. It is hoped that the principal consuming country and the tin producers may mutually appreciate the difficulties facing the industry and seek a solution in a spirit of harmony.

The net revenue of the company is £309,125 compared with £236,227 for the preceding year.

Your Directors have decided to recommend for approval a dividend on the Ordinary Stock of 2s., together with a bonus dividend of 6d., making a total of 2s. 6d. per £1 Stock.

I am glad to report that considerable progress has been made with the assessments of War Risks Insurance and War Damage Claims in Malaya. The claim made by Eastern Smelting Co., Ltd. has been finally agreed and an award made on June 16, 1951, approximates closely to the claim submitted. Shortly after this date Eastern Smelting Co., Ltd. received a payment equivalent to 40 per cent of the award.

The Report and Accounts were unanimously adopted.

## NIGERIAN ELECTRICITY SUPPLY CORPORATION

The Twenty-Second Ordinary General Meeting of the Nigerian Electricity Supply Corporation, Ltd., was held on September 18 at 66, Queen Street, London, E.C., Mr. George Hemmant, C.M.G., the Chairman presiding.

The following are extracts from the Chairman's review for the year ended February 28, 1951:

Power sales fell from £214,122 to £207,923, due to an unusually prolonged dry season. The increase of £3,353 in operating costs was anticipated and is consistent with the general trend of rising costs in Nigeria and elsewhere.

Apart from the seasonal setback we have again had a successful year which has enabled us to appropriate £35,000 to depreciation and £25,000 to general reserve, and to recommend the usual 4 per cent final dividend, plus 2 per cent bonus, with an increase of about £3,500 in the balance to be carried forward.

The item "Fixed assets" is now £1,181,244—an increase during the year of £56,805, of which £37,038 was on account of the new Jekko II power station. This power station will during the dry season enable fuller use to be made of the Kurra water, and for the rest of the year it will provide a necessary reserve of power. Good progress has been made at Jekko, but it is unlikely that the power station will be completed before the middle of 1953.

It was estimated in 1948 that the construction and equipment of the Jekko II power station would cost £175,000. The general rise in costs both here and in Nigeria has made it necessary to increase this estimate, and the present revised estimate is £253,000. Your directors consider that part of this additional £78,000 should be met by a small and financially justifiable increase in our capital, and a resolution to increase our capital from £545,000 to £600,000 will be submitted for your approval. If this resolution is passed such shares (not exceeding 49,600) as it may be decided to issue will be offered in due course to shareholders in proportion to their holdings for subscription at par.

The satisfactory results in the year under review could not have been obtained without the loyal and efficient services of our manager and his staff in Nigeria, and our thanks are due to them and to our secretary and his staff in London.

The Report and Accounts were accepted.

## ASHANTI GOLDFIELDS CORPORATION LTD.

NOTICE IS HEREBY GIVEN that the Board of Directors have to-day declared an Interim Dividend (No. 110) on the issued Capital of the Corporation at the rate of 1s. per Unit of Stock, less Income Tax at 9s. 6d. in the £. This Dividend which is in respect of the year ending September 30, 1951, to be payable on and after November 6, 1951, to all Stockholders on the Registers on September 21, 1951.

The Transfer Books will be closed from September 22, 1951 to September 29, 1951, both dates inclusive, for the preparation of Dividend Lists.

By Order of the Board,  
Registered Address: E. W. MORGAN,  
10, Old Jewry, London, E.C.2. Secretary,  
September 18, 1951.

## BIBIANI (1927) LTD.

NOTICE IS HEREBY GIVEN that the Board of Directors have to-day declared an Interim Dividend (No. 28) on the Issued Capital of the Company at the rate of 4d. per Unit of Stock, less Income Tax at 9s. 6d. in the £. This Dividend which is in respect of the year ending September 30, 1951, to be payable on and after November 6, 1951, to all Stockholders on the Registers on September 21, 1951.

The Transfer Books will be closed from September 22, 1951 to September 29, 1951, both dates inclusive, for the preparation of Dividend Lists.

By Order of the Board,  
Registered Address: E. W. MORGAN,  
10, Old Jewry, London, E.C.2. Secretary,  
September 18, 1951.

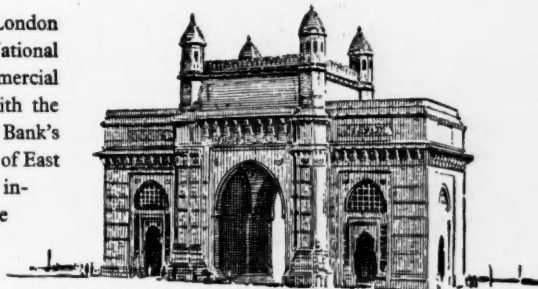
## W. E. SINCLAIR, M.I.M.M.

Consulting Mining Engineer  
South & East Africa & Rhodesia  
P.O. Box 1183. JOHANNESBURG

STEEL HELMETS Wanted to Buy.  
Large quantity of Helmet-linings For Sale. Box No. 512,  
Mining Journal, 15, George Street, London, E.C.4.

## The Gateway to India

Businessmen need go no further than London to find the key to the gate, for the National Bank of India can provide all commercial banking facilities needed for trade with the subcontinent of India. Moreover, the Bank's specialized knowledge of this area and of East Africa can be of great value to those interested in developing trade with these territories. Enquiries are welcome at Head Office and branches.



*A comprehensive banking service is available at the Bank's branches in*  
**INDIA, PAKISTAN, CEYLON, BURMA, KENYA, ZANZIBAR,**  
**UGANDA, TANGANYIKA and ADEN**

## NATIONAL BANK OF INDIA LIMITED

Head Office: 26 Bishopsgate, London, E.C.2.

# Metal and Mineral Trades

## THE BRITISH METAL CORPORATION LIMITED.

HEAD OFFICE  
PRINCES HOUSE, 93 GRESHAM STREET, LONDON, E.C.2  
Tel. Monarch 8055

AND AT  
17 SUMMER ROW, BIRMINGHAM  
Tel. Central 6441

47 WIND STREET, SWANSEA  
Tel. Swansea 3166

### OVERSEAS ASSOCIATES

THE BRITISH METAL CORPORATION  
(AUSTRALIA) PTY., LIMITED  
SYDNEY, PERTH AND MELBOURNE

THE BRITISH METAL CORPORATION  
(CANADA) LIMITED  
MONTREAL AND TORONTO

DREW, BROWN LIMITED  
MONTREAL AND TORONTO

THE BRITISH METAL CORPORATION  
(INDIA) LIMITED  
CALCUTTA AND BOMBAY

THE BRITISH METAL CORPORATION  
(PAKISTAN) LIMITED  
KARACHI

THE BRITISH METAL CORPORATION  
(SOUTH AFRICA) (PROPRIETARY) LTD.  
JOHANNESBURG

C. TENNANT, SONS AND CO.,  
OF NEW YORK,  
NEW YORK

## CONSOLIDATED TIN SMELTERS, LIMITED.

PRINCES HOUSE, 95 GRESHAM STREET, LONDON, E.C.2

Telephone: MONarch 7661/3

Telegrams: CONSMELTER, PHONE LONDON

PROPRIETORS OF THE FOLLOWING BRANDS OF LAMB & FLAG AND STRAITS TIN

**ENGLISH**  
(COMMON & REFINED)

**CORNISH  
MELLANEAR  
PENPOLL**

**STRAITS E. S. COY., LTD., PENANG**

BUYERS OF ALL CLASSES OF TIN ORES

*Sole Selling Agents:* VIVIAN, YOUNGER & BOND, LIMITED

8 BASINGHALL STREET, LONDON, E.C.2

Telephone: MONarch 7221/7

## IN ORES, CONCENTRATES, SLAG and BY-PRODUCTS

### GOLD

We are SMELTERS and REFINERS.

*Please send full particulars and samples:*

### SILVER

**DERBY & Co. Ltd.** 62-63 Cheapside, London, E.C.2

SMELTING and

(Established 1797)

### PLATINUM

REFINING WORKS: BRIMSDOWN (near London) Middlesex

Telegrams: PLATIVET, LONDON.

Telephone: CITY 2633

Cable Address: WAHCHANG, NEW YORK

## WAH CHANG CORPORATION

(FORMERLY WAH CHANG TRADING CORPORATION)

233 BROADWAY

NEW YORK 7, NEW YORK

## TUNGSTEN TIN

### BUYERS

Tungsten Concentrates, Tungsten Tin Concentrates  
Mixed Tungsten Ores  
Tungsten Tailings, Scrap, Tips, Grindings  
Tin Concentrates—Tin Dross, Tin Furnace Bottoms

### SELLERS

Tungsten Concentrates to Buyers' Specifications  
Tungsten Salts, Tungsten Powder  
Tungsten Rods and Wires  
Tin Ingots, Tin Oxides, Tin Chlorides

PLANT—GLEN COVE, NEW YORK



## THE BRITISH TIN SMELTING COMPANY LIMITED

English Refined Tin

### "HAWTHORNE" Brand

W. E. MOULSDALE & CO., LTD.

General Agents

2 CHANTREY HOUSE, ECCLESTON STREET, LONDON, S.W.1

## THE STRAITS TRADING Co. Ltd. SINGAPORE

Straits Refined Tin

### "Straits Trading Co. Ltd." BRAND

Correspondents in U.K.

W. E. MOULSDALE & CO., LTD.

2 CHANTREY HOUSE, ECCLESTON STREET, LONDON, S.W.1

## GEORGE T. HOLLOWAY & CO. LTD.

METALLURGISTS & ASSAYERS,  
ORE TESTING, WORKS AND  
METALLURGICAL RESEARCH LABORATORIES

Atlas Road, Victoria Road, Acton,  
LONDON N.W.10

Telephone No.:  
ELGAR 5202

Tels. & Cables:  
NEOLITHIC LONDON

## THE ANGLO METAL COMPANY LIMITED

2 & 3, CROSBY SQUARE,  
LONDON, E.C.3

(Members of the London Metal Exchange)

NON-FERROUS METALS  
ORES & CONCENTRATES  
BULLION

Telephone:  
LONDON WALL 6341  
(Private Branch Exchange)

Cables: NUCLIFORM, LONDON

Telegrams:  
NUCLIFORM PHONE  
LONDON

Telegrams:  
"BASSETT, PHONE, LONDON."

Telephone:  
MANSTON HOUSE 4401/3.

## BASSETT SMITH & Co. Ltd.

(Incorporating George Smith & Son)

15/18 LIME ST., LONDON, E.C.3

METALS,

ORES (Copper, Zinc, Lead, &c., Complex),  
RESIDUES, SKIMMINGS & ASHES  
NON-FERROUS SCRAP

## A. STRAUSS & CO. LTD.

FOUNDED 1875

37-39 LIME STREET, LONDON, E.C.3

Telephone: Mansion House, 8276

MERCHANTS, EXPORTERS, IMPORTERS

NON-FERROUS METALS

CRAP RESIDUES

METAL REFINERS

Members London Metal Exchange

ESTABLISHED 1869  
**BLACKWELL'S**  
**METALLURGICAL WORKS LTD.**  
THERMETAL HOUSE, GARSTON, LIVERPOOL 19

MAKERS OF  
FERRO ALLOYS, NON-FERROUS ALLOYS  
RARE METALS

BUYERS AND CONSUMERS OF  
COLUMBITE TANTALITE, TUNGSTEN  
MANGANESE and all ORES.

Works, Garston.

Telegrams: Blackwell, Liverpool

## EVERITT & Co. Ld.

40 CHAPEL STREET  
LIVERPOOL

Telegr. Address: Persistent, Liverpool

Phone: 2995 Central

**SPECIALITY**

## MANGANESE PEROXIDE ORES,

We are buyers of:—  
WOLFRAM, SCHEELITE, MOLYBDENITE  
VANADIUM, ILMENITE, RUTILE,  
ZIRCONIUM and TANTALITE ORES

Suppliers of:—

FERRO-ALLOYS & METALS NON-FERROUS ALLOYS

## THE ANGLO CHEMICAL & ORE COMPANY LIMITED

PALMERSTON HOUSE, BISHOPSGATE, LONDON, E.C.2

Importers and Exporters MINERALS · ORES · RESIDUES · CHEMICALS · NON-FERROUS METALS & SCRAP

TELEPHONE: LONDON WALL 7255 (5 lines)

TELEGRAMS: CHEMORE

**METAL SUPPLIES LTD.****EXPORTERS**TO  
**ALL MAIN WORLD MARKETS**Branches: NEW YORK, STOCKHOLM, MONTEVIDEO  
Agents: THROUGHOUT THE WORLD**72, VICTORIA STREET, LONDON S.W.1.**

PHONE: VICTORIA 1735 (3 LINES)

CABLES: METASUPS

**Gordon Simpson (Assayer) Ltd.**Consulting, analytical Chemists;  
assayers, samplers, etc.**191 CLAPHAM ROAD, LONDON, S.W.9**

Telephone: BRIXTON 1671

**RHONDDA METAL CO. LTD.**

1 HAY HILL, BERKELEY SQ. LONDON, W.1

Works: PORTH, GLAM.

**PHOSPHOR COPPER  
SILICON COPPER MANGANESE COPPER  
ALL NON-FERROUS ALLOYS**

Telephone: MAYFAIR 4654

Cables: RONDAMET

**CUPELS****MAGNESIA CUPELS and ASSAY MATERIAL**  
"MABOR" BRAND, as supplied to MINTS,  
MINES and ASSAYERS throughout the World.**MABOR (1944) LIMITED**

(Founded 1900)

THE PIONEERS OF MAGNESIA CUPELS

Registered Office: 310 Winchester House, London, E.C.2

Phone: London Wall 5089 Tel. Address: Maborlim, London

Agencies: SALEM, INDIA: MONTREAL, CANADA:  
PERTH, W.A.

Supplies through Agents, the Trade, or direct.

**METAL TRADERS LTD.****7 GRACECHURCH ST., LONDON, E.C.3**Telegrams:  
Serolatem, Stock, LondonTelephone:  
MANsion House 7275/6/7Buyers and Sellers of  
**NON-FERROUS METALS  
ORES AND MINERALS**New York Representative:  
Metal Traders Inc., 67 Wall Street**BROOKSIDE METAL CO. LTD.**

(Owned by Metal Traders Ltd.)

**HONEYPOT LANE, STANMORE, MIDDLEX.**Telegrams:  
Aluminium, StanmoreTelephone:  
EDGWARE 1646/7Buyers and Sellers of  
**ALL NON-FERROUS METALS**

Specialists in ALUMINIUM

Consult

**JOHN DALE**

LIMITED

about Aluminium Alloy  
**Gravity Die Castings**

DEPT. TS.7, LONDON COLNEY, ST. ALBANS, HERTS.

Telephone: BOWMANSGREEN 2266

**ALFRED HARRIS & Co. (Richmond) Ltd.**

FOR ALL SCRAP METALS

Specialties:—

**NICKEL MOLYBDENUM TUNGSTEN****MANOR PARK, RICHMOND, SURREY** Phone: 0028/9**LEOPOLD LAZARUS LIMITED**

Crechurch House, LONDON, E.C.3

(Also at BIRMINGHAM and MANCHESTER)

Telegraphic Address: Orminiaz, London

Buyers of:

**NON-FERROUS SCRAP, ORES AND RESIDUES**

Sellers of:

**SEMI-MANUFACTURED NON-FERROUS METALS****WOLFRAM ORE  
TIN ORE****FELIX KRAMARSKY CORPORATION****39 BROADWAY  
NEW YORK 6, N.Y.**Telephone:  
Whitehall 3-4062Cable Address:  
OrewolframTelegrams:  
NONFERMET  
TELEX, LONDONCables:  
NONFERMET  
LONDONTelephone:  
MANsion HOUSE 4521  
(10 lines)**HENRY GARDNER  
& CO. LTD.**Non-Ferrous Metals  
Ores, Minerals & Residues  
Rubber  
General Merchandise**2 METAL EXCHANGE BUILDINGS  
LONDON, E.C.3**

and at BIRMINGHAM, MANCHESTER and GLASGOW

**S. J. BARNETT & Co. Ltd.**

DERBYSHIRE HOUSE,  
BELGROVE STREET, LONDON, W.C.1  
Telephone: Terminus 3154

**ORES - METALS - RESIDUES****P. & W. MACLELLAN LTD.**

129 TRONGATE, GLASGOW  
**NON-FERROUS METALS** all classes  
**INGOT SCRAP MANUFACTURED**

Letters: P.O. Box 95 Glasgow Telephone: Bell 3403 (20 lines)  
Telegrams: Maclellan, Glasgow

**SHEARMAN & CO. LTD.**

(Est. over 30 years)  
BANK CHAMBERS, TAVISTOCK, DEVON  
Telephone: TAVISTOCK 497 Cables: SHEARMAN, TAVISTOCK

U.K. Brokers for several Portuguese Mines and Refineries offering:

**CASSITERITE, SCHEELITE, TIN INGOTS  
WOLFRAM ORE, LEAD ORE, MERCURY.**

Cape Town and Johannesburg Branches offer direct shipments of MANGANESE, IRON, CHROME, VERMICULITE, ASBESTOS, ANDALUSITE, MICA, now shipping to all destinations.

**ENQUIRIES SOLICITED****ESSEX METALLURGICAL**

(F. L. Jameson, A.M.I.M.M.)

**Assayers and Samplers**

Laboratories and Offices:

13 Woodhouse Grove, London, E.12

Telephone: GRAngeWood 4364

Grams: Assaycury, Forgate, London Cables: Assaycury, London

**MINING & CHEMICAL PRODUCTS, LTD.**

MANFIELD HOUSE, 376, STRAND, W.C.2

Telephone: Temple Bar 6511/3 Works: ALPERTON,  
Telegrams: "MINCHEPRO, LONDON" YVERBLEY, MIDDLESEX

**Buyers of Silver Ores and Concentrates**

Smelters and Refiners of

**BISMUTH**

ORES, RESIDUES & METAL

Manufacturers of:

**FUSIBLE ALLOYS, SOLDER, WHITE METALS  
ANODES OF TIN, CADMIUM and ZINC IN  
ALL SHAPES**

Importers and Distributors of:

**ARSENIC BISMUTH CADMIUM  
CAESIUM SALTS INDIUM SELENIUM  
TELLURIUM THALLIUM**

**COMPLEX****& LOW GRADE****MATERIALS\***

are treated on

toll or bought

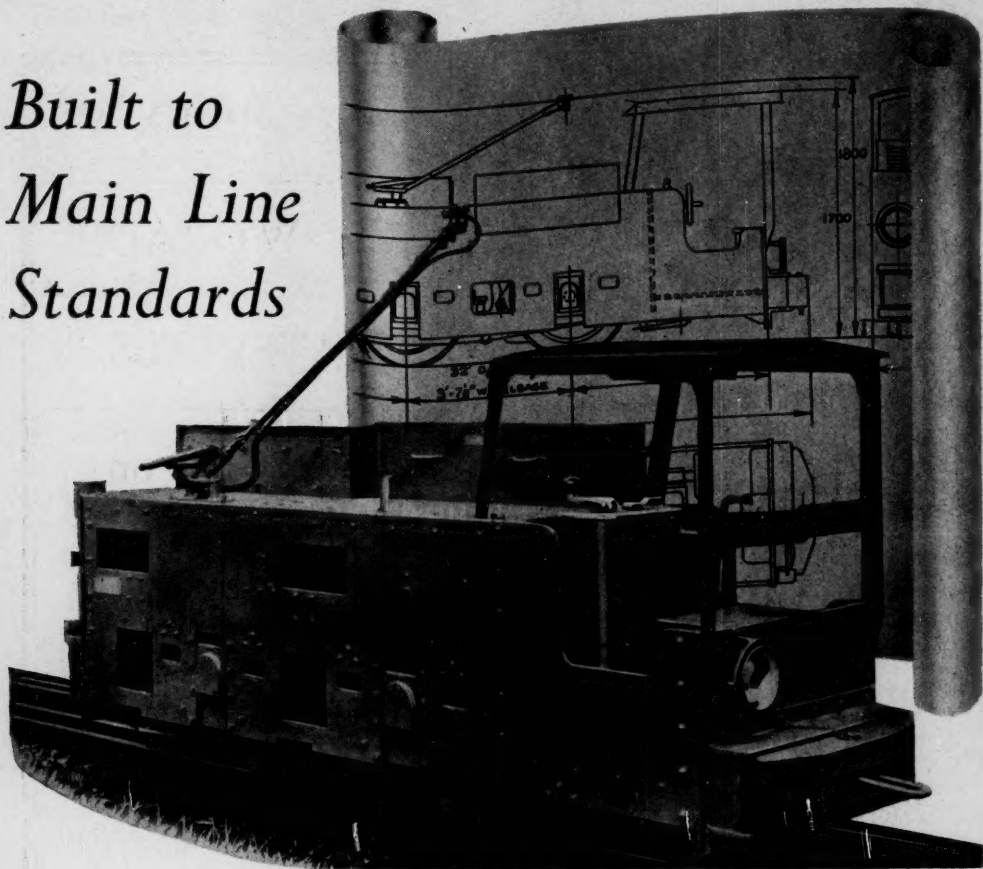
outright by

**Capper Pass**

\* containing principally TIN  
and/or LEAD whether free  
from or combined with any  
of the metals  
**COPPER, ANTIMONY,  
BISMUTH and SILVER**

Send Samples to us at  
BRISTOL, ENGLAND

*Built to  
Main Line  
Standards*



## METROVICK Mining Locomotives

The high performance of Metrovick mining locomotives owes much to the Company's wide experience in every branch of electric traction. Built in accordance with main line practice, Metrovick mining locomotives may be either trolley type or battery operated. There are twelve different sizes of 2-axle trolley locomotives suitable for surface or pit operation. In addition, flameproof or non-flameproof battery locomotives can be supplied in various sizes. Full technical details covering the range of Metrovick mining locomotives will be sent on request.

*Metrovick trolley type mine locomotives built for European countries can be supplied to suit any gauge widths from 18-ins. upwards.*

METROPOLITAN-VICKERS ELECTRICAL COMPANY LIMITED, TRAFFORD PARK, MANCHESTER, 17

*Member of the A.E.I. group of companies*



**METROVICK** Traction for More Efficient Transport

K/L103